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MONTHLY CYCLOPÆDIA

AND

MEDICAL BULLETIN

(CONSOLIDATED)

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CHARLES E. DE M. SAJOUS, M.D. JOHN V. SHOEMAKER, LL.D., M.D.

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EDITORS

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

THE BRADSHAWE LECTURE. ON THE PLEURAE: PLEURAL EFFUSION AND ITS TREATMENT.[1]

Delivered before the Royal College of Physicians of London, November 5, 1907.

BY SIR JAMES BARR, M.D., LL.D., F.R.C.P., F.R.S.E.

Senior Physician, Liverpool Royal Infirmary; Visiting Physician, Haydock Lodge and Tuebrook Asylums.

(Concluded from December issue.)

TREATMENT.

Cases of dry pleurisy require very little treatment except some counter-irritation, a diaphoretic, a purgative, and perhaps a sedative to relieve pain, or some strapping of the chest to limit the amount of movement.

I wish to take this opportunity of emphasizing the principles which underlie my methods of dealing with effusions into the pleural cavities. At the present time this is the more necessary, as I find that I have got a few imitators, who have never seen me treat a case, but who think the whole method consists in withdrawing more or less of the effused fluid and injecting a little adrenalin solution. I am not surprised when I hear that they do not attain the success which I may say almost invariably follows my efforts.

In the treatment of pleural effusion the question often arises, When should you withdraw serum? This is rather an important question, and one which is more easily asked than answered. You know that if the effusion be not very great it often gets absorbed after the febrile stage passes off, with or without any special medication. Many devices have been advocated to hasten the

[1] **Published simultaneously by Sir James Barr in the British Medical Journal and the Monthly Cyclopædia.**

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absorption, with more or less success. Being naturally of a conservative frame of mind, I do not care for meddlesome interference with natural processes, consequently I sometimes give Nature a longer chance than is perhaps advisable. The effusion is a natural process, which, if it continue till after the inflammation has subsided, lessens the risk of pleuritic adhesions; it also keeps the collapsed lung quiet, which is very desirable if there be any active tuberculosis in the lung. A very large proportion of cases of pleurisy are tuberculous, and the early withdrawal of fluid causes vascular turgescence of the lung, often hastens the dissemination of the tubercle bacilli, and kills the patient. Before I began the substitution of one fluid for another by the introduction of air into the pleural cavity, I was much more chary of early tapping than I am at present. I can now remove the whole of the effusion, even in tuberculous cases, at an early stage, with perfect impunity. A considerable number of deaths have followed the complete withdrawal of effusion in elderly persons with rigid chest walls. The danger in such cases arises from establishing too great a negative pressure which leads to hyperæmia and œdema of both lungs; this can be obviated by the introduction of air. I now recommend the complete withdrawal of the effusion in all cases, but before any great negative pressure is established, and before the patient feels any discomfort, I stop the siphon and introduce about an equal quantity of air to the amount of fluid which I have withdrawn. I then re-establish the siphon and complete the withdrawal of the effusion. When all the liquid is withdrawn I inject 4 cubic centimeters of adrenalin solution (1 in 1000) diluted with 8 or 10 cubic centimeters of sterile normal saline; and, if I think it necessary, I introduce more sterile air, so as to make the total amount equal to half or three-fourths of the bulk of the fluid withdrawn; the larger quantity of air is introduced in tuberculous cases. By this method the patient suffers no discomfort except from the slight thrust of the trocar. I prefer the siphon to the aspirator because you can readily regulate the force of the suction, and as your tube only reaches to a receptacle on the floor practically your negative pressure never exceeds 1 pound to the square inch; this force is greatly exceeded by the aspirator, and the greater the negative pressure the greater the risk of secondary hyperæmia or œdema. It is an advantage to introduce a manometer in the air tube, as you can thus avoid producing any positive pressure in the pleura. Of course all aseptic precautions are taken. (I now exhibit my apparatus for this treatment.)[1]

The adrenalin solution is introduced to contract the blood-vessels and lessen the secretion. According to Schäfer, Elliott, Brodie, and Dixon, adrenalin only

[1] Manufactured by R. Sumner and Co., 50A Lord Street, Liverpool.

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acts on unstriped muscular fiber which is innervated by the sympathetic; the pleural vessels belong to the systemic system and are thus innervated, but its effect is not very prolonged, consequently you cannot expect it to lessen the secretion for any great length of time if there be a great negative pressure in the pleura. Although I had very good success from its use before I commenced the introduction of air, I soon recognized the limits of its usefulness. When you remove four or five pints of serous fluid from the pleura there is a potential or actual cavity left which cannot be filled by a drachm of any fluid. Such a cavity cannot exist in the human body with a surrounding atmospheric pressure of 15 pounds to the square inch. It is filled by: (*a*) The carbonic acid gas which escapes from the serous fluid; (*b*) by the more or less expansion of the collapsed lung; (*c*) by the return of the mediastinal contents which were pushed or drawn to one side, and the further expansion of the other lung; (*d*) by increased quantity of blood in the chest; (*e*) by elevation of the diaphragm; and (*f*) by falling in of the chest wall. All these events may not suffice to fill the cavity if the amount of fluid withdrawn have been very great, and the lung be so collapsed and bound down that it cannot expand. In this case the negative pressure is very great, and under such circumstances it would be absurd to expect adrenalin or anything else to permanently check the secretion. When the use of adrenalin is supplemented by the introduction of air, the negative pressure is lessened or abolished, and the lung gradually expands as the air gets absorbed. By this combined method you can operate early in any case, even during the febrile stage, and under no circumstances should you allow the fluid to accumulate to such an extent as to completely collapse the lung; you should tap before the patient suffers any respiratory distress. By the removal of the effusion you often remove an enormous number of microörganisms, and by the introduction of sterile air you substitute a light innocuous fluid for a heavy and deleterious one.

Dr. W. Ewart of London has recently been injecting adrenalin solution into the pleural fluid preparatory to drawing it off, and he has had good success in thus stimulating the absorption of the effused fluid.

I always like to treat the individual rather than his disease, consequently I try to avoid routine, and I make such modifications in treatment as will suit each individual case. When the pleurisy is practically cured you will find plenty of scope for ingenuity in trying to restore the function of the lung to its pristine vigor. I have no time to enter into the numerous respiratory exercises which I from time to time recommend, but there is one which each of you can try on himself, the marked effect of throwing one serratus muscle into and the other out of action. You can also study my observations on the conditions of

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intrapulmonary pressure in the different stages of respiration. The function of a physician used to consist in prescribing drugs and giving some directions about diet, but fortunately these days have passed forever. I have not told you anything about drugs, though I am a firm believer in their efficacy when appropriately used, as I have not got any specifics for pleural effusion. There is one drug, common salt, which you should as far as possible eliminate from the diet, especially in cases of sero-fibrinous pleurisy, on account of its high osmotic equivalent. When you hear men telling you that they gave 10 minims of something or other three times a day, and the fluid disappeared as if by magic, you can envy such credulity, but it is impossible to admire it. Like a good many of my countrymen, I am rather critical, and have not sufficient faith where the action of drugs is concerned. If you say to an Irishman, "I hope the medicine has done you good," you will not infrequently get such a reply as: "Well, thank God, it has done me no harm anyhow." That is about the value which I attach to drugs which are given to cause absorption of a serous effusion in the pleural cavity.

When there is a large quantity of effused fibrin, such as occurs in pneumococcal pleurisy, decalcifying agents such as lemons, citric acid, the citrates of ammonium, potassium, and sodium, may be used. However it will be well to reserve the use of these drugs until the acute stage of the accompanying pneumonia has passed, as the lime salts are exceedingly useful in that disease.

In order to hasten the solution and absorption of the effused fibrin I see no objection to the introduction of trypsin into the pleural cavity. I am engaged in investigations with reference to the limitation or prevention of pleural adhesions. With this object in view I am at present injecting into the pleural sac liquid paraffin, which has a lower specific gravity but a higher surface tension than the normal lubricating fluid. The results of my observations will be given at a later date.

I shall now give a short account of the history of the introduction of adrenalin and air into the pleural cavity. In August, 1902, I saw regularly, in consultation with Dr. Chisholm, Mr. F. T. Paul, and Mr. R. A. Bickersteth, a lady who was suffering from secondary cancerous deposits in the pleura with effusion. The fluid had to be withdrawn every four days, and it reaccumulated so quickly that she had scarcely a day free from distress in breathing between the aspirations, and I saw that this state of matters could not continue long. Necessity is the mother of invention, and I began to consider how to lessen this secretion. I came to the conclusion to try an injection into the pleural cavity of the suprarenal extract, and I fixed upon Parke, Davis and Co.'s adrenalin chloride, 1 in 1000, as being a sterile preparation. I empirically fixed 1 drachm,

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or 4 cubic centimeters, as the amount to be injected, and after the fifth aspiration this quantity was used. There was no further secretion, consequently no further tapping, and the old lady spent the remainder of her life in perfect comfort, as far as the chest was concerned. In her memory her husband contributed £12,000 to establish the Liverpool Cancer Research Fund.

Since this case I have injected 1 drachm of adrenalin solution into every pleura which I tapped, and in only two cases have I had to draw off the fluid a second time. Soon after I began this method—to which no one has laid a prior claim—I commenced in addition the introduction of sterilized air to replace the fluid which I had withdrawn. I was led to adopt this procedure by the distress frequently caused to the patient by any attempt to withdraw all the serum; by the usually rapid reaccumulation, especially when there was any negative pressure left in the pleura, or there was a large potential or actual cavity owing to the lung being so collapsed or bound down that it could not expand; by the great risk of collateral hyperæmia and œdema of one or both lungs, especially in those persons with rigid chest walls; and by the fact that in tuberculous cases there is apt to be a rapid dissemination of tubercle through the lung when the pleural pressure is removed. As four-fifths of the air is nitrogen, which is only slowly absorbed, this air pad tends to prevent or lessen pleural adhesions. Since I began the substitution of air for serum I have been able to withdraw the whole of the liquid with perfect impunity.

I exhibited my first and second apparatus for the introduction of adrenalin and air into serous cavities at the Liverpool Medical Institution on November 5, 1903, and the following week there was a notice of my apparatus in the proceedings of the Medical Institution published in the weekly medical journals.

In the British Medical Journal of March 19, 1904, I published a clinical lecture on the "Treatment of Serous Effusions," in which I fully described my method and apparatus for treating effusions into all the serous cavities. At that time the idea of injecting sterilized air was quite original as far as I was concerned, and some of the leading members of the medical profession to whom I spoke on the subject had never heard of any such practice, but I afterward found that some others, to whose writings I shall presently refer, had been in the field before me.

In the Edinburgh Medical Journal of November, 1886, Dr. Theobald A. Palm published an account of 3 cases in which he allowed air to be sucked into the pleural cavity after aspiration. One case recovered after one tapping, another after two, and the third case took an unfavorable course, and in the course of some months the patient died.

On April 24, 1888, M. Potain communicated to the Academy of Medicine,

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Paris, a successful case of pyopneumothorax treated by the injection of sterilized air after the removal of the liquid. His object was to keep the lung compressed until the pleuro-pulmonary fistula had healed, and to prevent the reproduction of the liquid.

In Italy several papers appeared between 1888 and 1902 on the introduction of air into the pleural cavity by Drs. G. Lava, G. Cavallero, S. Riva-Rocci, and Professor Forlanini.

About or before 1900 Professor Ayerza and his pupil, Dr. Bungé of Buenos Aires, treated cases of acute and chronic tuberculous pleurisies by the abstraction of the liquid and the injection of oxygen gas. They used oxygen as a specific medication against the tubercle bacilli, but as oxygen is more readily absorbed than nitrogen, in no case did the pneumothorax last longer than fourteen days. Recently Professor Forlanini has advocated the treatment of phthisis by the repeated introduction of oxygen gas into the pleural cavity so as to maintain an artificial pneumothorax and thus rest the lung. About a century ago a somewhat similar treatment of phthisis was carried out in Liverpool by the late Dr. Carson and Mr. Robert Bickersteth. They produced pneumothorax by an external opening into the pleura, but they soon gave up the practice.

At the Société Médicale des Hôpitaux de Paris (May 23, 1902) MM. Vaquez et Quiserne reported two cases of chronic pleurisy successfully treated by aspirating the liquid and injecting in each case 3 or 4 liters of sterile air. One case had been previously aspirated twelve times, and the other five.

In the Gazetta Medica Italiana, March 3, 1904, there appeared a communication on thoracocentesis with the introduction of sterilized air after the method of Professor Forlanini, by Dr. Antonio Pisani. He records the case of a child of 9 years of age from whom he removed 1600 cubic centimeters of fluid, which had probably been in the pleura for eleven weeks. During the operation he insufflated 1000 cubic centimeters of air filtered through cotton-wool slightly impregnated with formaldehyde. At the end of the operation part of the air was removed by aspiration.

In the Lancet, November 10, 1906, there is an editorial reference to a case reported at a meeting of the Société Médicale des Hôpitaux de Paris on October 12, 1906, by M. Dufour and M. Foix. They successfully removed a large chronic pleural effusion and injected sterile air.

Dr. W. Ewart has recently allowed filtered air in a Woulfe's bottle to be sucked in by the chest. In my original apparatus I used a large Woulfe's bottle, but I drove in a measured quantity of filtered air by a falling column of sterile water of a few inches in height. This, in my opinion, was a perfect apparatus, but it was too cumbersome to carry about.

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This systematic treatment of pleural effusion by the combined method of the complete withdrawal of the liquid, and the introduction into the pleural sac of adrenalin and sterile air,[8] which I may fairly claim to have originated, will, I hope, be more appreciated as it becomes better known. The adrenalin solution is better diluted with two or three times its bulk of normal saline solution.

Empyema.

This is one of those numerous diseases which the surgeons have taken under their own special care, but they have done nothing to advance its treatment—I presume because physics seem to have formed no part of their education. In the case of a child with elastic chest walls you could not easily mismanage a case of empyema. A considerable number of cases get well in spite of treatment. When a surgeon has to deal with a purulent effusion in the chest, about the only idea which he can get into his head is free drainage, and forthwith out comes a piece of rib and in goes a large drainage tube; he expects it to suck up the liquid from the most to perhaps the least dependent part of the cavity, utterly reckless as to whether the collapsed lung ever expands again or not. Dr. Otto Grünbaum has devised a useful appliance for assisting the lung to expand in these mismanaged cases, but I do not know of any surgeon who has taken it up. Mr. Arthur Edmunds, to whose valuable work I have previously referred, insists on the anæsthesia being very light when operating on an empyema, so as not to abolish the pleuro-laryngeal reflex, and thus the vocal cords are enabled to play their part in maintaining the pressure within the lungs.

If I were a surgeon and had to deal with such a case I would use a local anæsthetic, such as eucaine; or, if thought necessary in any particular case, light general anæsthesia as recommended by Mr. Arthur Edmunds; I would make a free incision in a very dependent spot, about the eighth or ninth intercostal space, in a line with the lower angle of the scapula. If the ribs were close together it would be well to take out a long piece of one rib and then make a very free incision into the pleura. An assistant should firmly compress the side so as to drive the purulent matter out and allow as little air as possible to enter the chest during the operation. A strip of gauze may be inserted in the wound to keep it open, but no tube should be introduced; I would then apply a large piece of sterile oiled silk over the wound to act as a valve, so as to allow the fluid to escape and no air to enter. Large aseptic dressings should be applied over the valve. The affected side may be well strapped to prevent movement. I would make the patient lie on or toward the affected side, so as to lessen move-

[8] I have in a few cases used oxygen, but as a rule I prefer air because it is more slowly absorbed.

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ment and encourage drainage, prevent him taking any deep inspirations, and tell him to make deep nasal expirations, so as to expand the affected lung and drive the purulent fluid out of the pleural cavity. He should be instructed to inspire through the mouth and expire through the nose. I would also make him frequently practice the Valsalva method, or blow through a small tube. If the pus be very offensive or not draining well, the patient can be treated in a continuous bath and then no dressings will be required.

In these cases the pus is usually fairly liquid, is neutral, or may even be slightly acid in reaction, contains some peptone and a ferment which seems to have the power of digesting fibrin, and thus the lung is not likely to be irreparably collapsed or bound down by adhesions; there is, therefore, a fair chance of success if the operation be adopted early, and after-treatment intelligently carried out.

The variety of microörganisms in the pus should be ascertained, and an appropriate vaccine, after the method of Sir A. E. Wright, should be used. Even the stinking empyemata from the Bacillus coli often do very well. Tuberculous cases are the most troublesome, and usually when the fluid becomes purulent there is a mixed infection. Cases of pyopneumothorax are best treated by drawing off the fluid and filling the cavity with sterile air or oxygen. Where the empyema is loculated the surgeon may remove a piece of the rib and use a drainage tube if he choose; he cannot do much harm. Unfortunately, Estlander's operation is often necessary, partly owing to early mismanagement of the cases. There must be some effort made to place the treatment of this disease on a more scientific basis than that on which it at present stands.

I have spoken strongly about the surgeons because I feel strongly, and I am anxious that they should remove this blur from their escutcheon. The old wheeze about the physicians not handing the cases over soon enough is now played out. There is still, however, plenty of work for the physicians; prevention is better than cure, and I think in the future their work should lie more and more in that direction. Our aim should be to protect the individual from the ravages of disease and the onslaught of the surgeon, and make the very existence of that individual less and less of a necessity.

THE NATURE AND TREATMENT OF FEVER.

By WOODS HUTCHINSON, A.M., M.D.

NEW YORK CITY.

We have already reached the Socratic wisdom of admitting that we do not know what fever means and are still in the dark as to the mechanism of its

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production, and the more intelligent of us no longer treat fever as such, any more than we are satisfied to prescribe for "dyspepsia," "general debility," or "muscular rheumatism." An enormous mass of thoughtful, painstaking, and conscientious research has been done upon the problem, which, while it has not brought us to, or even apparently in sight of, the solution, has been exceedingly helpful in clearing away some of our misconceptions. First and most important among these was the hyperoxidation theory of fever, the idea that, to put it very crudely, the body metabolism had burst into a blaze and the tissues were burning themselves up too rapidly, with the consequent rise of temperature, as if the fire in the stove had spread to the walls of the house. This was a most attractive and plausible explanation, fitting in beautifully with the flushed cheek, the burning skin, the throbbing temples, the sensations of heat and fullness, the rapid loss of weight, the decline of muscular energy, the hot, quick breath—all of which seem to show the nature of the trouble upon their very face. Was not the body an engine, did not heat drive the engine, and was not oxidation the source of that heat? A little excess of oxidation produces more heat, burns up more of the body fuel than is economical, a rise of temperature ultimately produces a wasting patient.

Moreover, our first tests with the thermometer showed that the temperature of an inflamed part, which was accessible to direct observation, was distinctly higher than that of the surrounding tissues. Nothing could have been clearer; but the moment that it began to be seriously considered flaws began to appear in it. The increased heat of the tissues at the seat of the inflammation, for instance, was soon shown to be merely due to their having a more abundant blood-supply pumped through them with greater rapidity from warmer depths of the great viscera. The flushed skin and red eye of febrile reaction were shown to be due to precisely the same cause, the temperature already in many cases having fallen several degrees from the apparently cold and clammy stage of chill.

Careful tests with the calorimetric chamber showed that there was no appreciable increase in the total amount of heat given off by the body; in fact, in many cases even a diminution. Last and most fatal, an accurate measurement of the amounts of oxygen taken in and CO_2 given off showed that, after a brief temporary increase, there was a return to nearly normal level, followed in continued fevers by an actual diminution in the amount of both intake and output of oxygen. Moreover, the whole simile of the body to a steam engine, with heat as the motive power, is beginning to be regarded as untenable and misleading. The actual work of the body is probably done by the chemical or electric energy stored up in the complex food-molecule, the heat produced more likely a friction waste-product or an incident of garbage-burning. The body is

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not burning itself up in fever, fever patients are not in the condition of a man doing heavy tasks of hard muscular labor, and all methods of treatment based upon this conception will have to be modified or abandoned.

Next, and closely connected with this, was the impression that the chief danger was from high temperature, as such, which either directly burnt up and destroyed the body tissues at an excessive rate, or caused such changes in them as would result in their rapid breaking down and absorption. This is now believed to be unfounded. Experiments upon rabbits and other animals, placed under such conditions of heat, moisture, etc., as to raise the body temperature from two to four degrees, have shown that this elevation could be maintained for a considerable period of time without producing any of the more serious symptoms of fever. A mere elevation of two or three degrees is not seriously injurious to any healthy organism. The tissues of such animals were carefully examined after death, and, while not perfectly normal, were found to be free from the familiar cloudy swelling of the protoplasm, which is so characteristic of true fever, if it be prolonged beyond a very moderate time. In other words, it has been pretty clearly established that the destructive changes in the tissues in fever are due, not so much to the elevation of temperature, as to the toxin which causes the elevation. Precisely similar changes may be brought about by the injection of toxins in large amounts *without the production of any elevation of temperature whatever;* on the contrary, in many cases the temperature will actually be depressed below the normal.

In our own species it has also been found that the actual temperature of the healthy human body is not by any means maintained at such a fixed and rigid level as we had come to believe, but is capable of very considerable variations, under the influence of heat, of cold, of violent and prolonged exertion, etc., without any serious disturbance of the general health or metabolism.

This points to the important practical conclusion, already reached from the clinical point of view, that to merely reduce the temperature is by no means to cure the disease or necessarily to improve the patient; that it is not the temperature upon which we should fix our attention and towards which we should direct our treatment, but the toxins of the infection which produce it.

Very instructive in this regard are the findings of Roger and Héricourt, who found that in rabbits the same toxin which, in moderate doses, would produce a marked elevation of temperature, with the clinical symptoms of fever, in large doses would produce, instead of an elevation of temperature, a marked depression. If the dose were still larger, this depression of temperature would rapidly increase and the animal die in algid collapse within a few hours, showing clearly that an elevation of temperature is indicative of the possibility of resistance on the part of the tissues.

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How many of our boasted and much-used antipyretics act simply like an increased dose of the toxin, by depressing the vital resistance and preventing the temperature reaction?

I have no hesitation in naming two—aconite and veratrum—and expressing grave suspicions of a third, namely, the whole group of coal-tar products. The man who gives aconite or veratrum in a case of pneumonia, typhoid, or appendicitis is pouring a second poison into the body of his unfortunate patient to suppress the resistance which it makes against the first. They make the patient more comfortable and the doctor much easier in his mind for the time being, but what of the ultimate outcome? They lower the temperature, slow the pulse, but it is much after the same fashion that a blow on the head with a club will quiet the struggles of a man resisting arrest, or a dose of opium will relieve the fatigue of a soldier on the march.

Even the classic controversy, whose battle cries were "thermolytic" and "thermogenetic," has lost most of its interest and pertinency; for, if the accumulation of heat in the body in excess is not the cause of the distressing symptoms of fever, but merely one among them, and the real damage is done by the toxin, it boots little whether that increase in heat be due to an excessive production, as the genetic protagonists proclaim, or an inadequate dissipation, as their "lytic" opponents contend. Like many of the great historic controversies which have convulsed the world, it has come perilously near resolving itself into, for all practical and vital purposes, the difference between tweedledee and tweedledum. The heat alone does not do the harm; nay, it is not even a reasonably constant accompaniment of harm done, or index of the amount of the same. So that it makes really no important difference whether it is produced faster than it can escape, or is prevented from escaping as fast as it is normally produced. The vital problems are those of toxogenesis and toxolysis—what influences produce and promote the formation of the toxin, and what influences neutralize and promote its elimination. So far as any decision has been arrived at, it would appear as if the thermolytics had a shade the best of the controversy, inasmuch as it has been clearly shown that there is no increase of oxidation, except for very brief periods, and these followed by a fall, and there is unquestionably in fever a serious disturbance of that part of the vasomotor center which is concerned with the dermal circulation and the escape of heat. But to regard this disturbance of the so-called thermotaxic center as the cause is little short of absurd, when it is obviously only a part of the general disorganization and disturbance of metabolism set up through the entire body by the toxin, or toxins.

This heat-regulating mechanism is one of the wonders of the animal

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body, so exquisitely responsive, so elastic, so resourceful, that it would take a whole chapter to describe even the barest outline of the more important feats of which it is capable. Physiologists are never weary of singing its praises, and from our student days we have been continuously called upon to bow down before and admire its excellences, until we have unconsciously adopted an attitude of reverence towards it which has not exactly promoted a rational understanding of its variations. We have come to speak of it as if it possessed an independent intelligence of its own and devoted its entire effort to the maintenance, unchanged under all circumstances, of that sacred and never-to-be-departed-from standard, 98.6 degrees Fahrenheit. Moreover, so great is its constancy, and so unerring the certainty with which it will return to this particular level under all sorts of variations of environment, that we have been led to regard this particular pitch of temperature as one of the most vital of vital requirements for the welfare of the body, as an absolutely indispensable requirement in the physical plan of salvation.

I believe that we have here been again misled, and this brings us to the particular questions which I wish to raise, and in regard to which this paper is simply to be regarded as an enlarged interrogation point, namely, the meaning and importance of temperature, both normal and abnormal, in the animal body.

A very brief examination of this remarkable heat-regulating mechanism shows us that it is by no means unusually so uniform or so exquisitely rigid as we have been in the habit of assuming.

One "foot of clay" of this fixed-temperature idol is that it is subject to much wider and more frequent variations than we usually recognize. Not only does the temperature vary through a range of nearly a degree, according to the situation in which it is taken—the mouth, the axilla, the rectum—thus raising a suspicion that it is a question of the abundance in which hot blood from the interior is thrown out to the surface, which is one of the chief factors in so-called rise of body-temperature, but there are marked fluctuations in this superficial temperature in health and in various conditions which are not necessarily associated with disease. For instance, the sacred 98.6, instead of being a fixed thing, is simply an average of the daily temperature of the normal individual taken between the hours of 10 A.M. and 4 P.M., in other words, office hours. When we begin to extend our researches to the earlier hours of the morning and the late hours of the afternoon a difference is shown. Our normal patient will register some other figure at least three or four times as often as he will register just precisely 98.6 In other words, there is a regular diurnal variation of temperature corresponding to the degree of activity, both muscular and metabolic, carried out in the body, extending over a range

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of a degree to a degree and a half, lowest, of course, in the hours between the dawn and the early morning, and highest in the hours between mid-afternoon and early evening. If a certain fixed temperature be an absolutely indispensable factor in the normal environment of healthy tissue, then our bodies are in distinctly abnormal condition in the early hours of the morning and again in the late hours of the afternoon and early evening. Again, the suspicion is raised that temperature, or vital heat, as we have termed it, is merely *an incidental function of the metabolism of the body and not a vital necessity.* Further than this, there are, of course, also changes between youth and old age, the temperature of the child being usually given as slightly lower than that of the adult, and of the old man as slightly higher. Authorities vary somewhat in their findings in this respect, and it seems most probable that the temperature, instead of being absolutely higher or absolutely lower at either of these two extremes, is slightly more changeable and covers a wider daily range. Further than this, careful experimentation has shown that the temperature of the body, particularly when deeper parts, like the rectum, or the interior of large muscles, or of the great viscera, are taken as tests in animals, may undergo appreciable and even considerable variations under various circumstances without any disturbance of the general health being discoverable. For instance, under vigorous and violent muscular effort there is distinctly appreciable rise of temperature in perfectly healthy individuals. Exposure to high external temperature will also be followed by a rise of half to three-fourths of a degree, and even a disturbance like hysteria, or sudden shock, without ascertainable organic lesion, will be attended by marked rise of temperature, yet with little or no disturbance of the general health and no suspicion of other phenomena of fever.

We are now coming to realize, from keeping correct charts and extending our temperature takings over eighteen hours out of the twenty-four—instead of eight—that the essence of fever is not an absolute rise, nor yet an absolute fall, but *an increase in the range of daily variation.* This increase is simply an exaggeration of the normal rise and fall that takes place in perfect health. In other words, our conception of fever should be revised from a mere elevation above a certain fixed level, say 100° F., to an increase in the normal daily variation to an excess of a degree and a half. A perfectly normal individual, for instance, will range from 98.2° in the morning to 99.0° in the afternoon, a variation of eight-tenths of a degree. A typhoid case, on the other hand, will run from 100.5° in the morning to 103° in the afternoon, a range of two and a half degrees; a tuberculous case will range from 97° in the morning to 101.5° in the afternoon; thus showing that the chief element in fever is the

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marked increase in the daily range of temperature. Clinically, our definition of fever should, in my judgment, be *a daily range of temperature in excess of one and a half degrees.*

It may be nothing more than a coincidence, or it may be that we have revised our conception of warm-blooded and cold-blooded animals to almost precisely the same basis. The warm-blooded we call *homoiothermal,* or "even-temperatured," by that really meaning a daily range of temperature of only very limited extent. The cold-blooded we now term *poikilothermal,* or "changeable-temperatured," because their temperature has so much wider range. They are generally actually "cold-blooded," because the average temperature of air or water is below that of mammalian blood; but in a sufficiently warm medium, either aerial or aquatic, their temperature may rise to mammalian, or even fever heat, as shown by Sutton's observations of a temperature of 103° in a python lying in the sun.

This brings us to the crux of the whole problem, upon our answer to which both our conception and treatment of fever will depend, and that is what is really meant by body temperature. Is it a vital necessity or a mere accompaniment of vital processes, which may or may not be present? There might be some doubt as to our answer to the first part of this question so long as we confine our views to mammals and birds, in all of whom a fixed body temperature of a certain degree of elevation is a constant condition; but the moment we look outside of this restricted field, the question answers itself at once, for we see cold-blooded animals, with body-temperatures only removed a few degrees from that of the sea-water or air in which they live, carrying out absolutely every activity of which our bodies are capable, only, of course, in less degree.

The whole world of plants are capable of a constructive metabolism and growth which our bodies can only feebly imitate to a very limited extent without even a fraction of a degree of elevation of temperature above that of the surrounding earth, air, or water, which latter may be within a few degrees of the freezing point. Growth, movement, reproduction, constructive metabolism of the most elaborate sort are all alike possible at very low temperatures.

Any one who, in Alpine rambles, has seen the little schnee-rosen pushing their heads right up through the snow crust, or climbing higher, has seen the "red snow" due to a powdering over of its surface with swarms of tiny fungi, thriving and reproducing upon the frozen crust, will have no difficulty in dissociating vital activity from heat.

The majority even of plants, of course, will flourish better in a moderate amount of heat, and an excessive amount is just as injurious as a deficiency. And the same is true of light, electrical tension, moisture, nitrites, and a number

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of other factors in the environment. Heat is a useful factor in plant growth, but is it anything like as indispensable as we have usually assumed?

The case of the "cold-blooded animals" is somewhat different, though parallel to this extent, that they depend largely upon the surrounding medium for the precise pitch of their body heat. But their temperature, while almost that of the surrounding medium, is never quite identical with it, and they have limits both above and below which vital activities cease. As before intimated, we use the term cold-blooded simply as one of convenience and because it is already widely known, and clearly defines the class of animals to which we refer. It is, however, a misnomer, because animals of this class, though cold-blooded in a cold medium, are warm-blooded in a warm medium; and further because, while their temperature varies with the surrounding medium, it is never exactly identical with it. The frog, for instance, living and moving actively in water, at a temperature of 68°, shows a stomach temperature 0.5° higher; if that water be raised to 75 or 80, will only follow the upward change with his temperature to the extent of 5 or 6 degrees—to 70° or 72°. If, on the other hand, the water be chilled down to 48° or 50°, his temperature will drop to about 55°. In other words, he has a sort of central norm around which his temperature variations circle, keeping between it and that of the surrounding medium. This is even more clearly seen when the frog is out of the water, for here his temperature, with the surrounding air at 5.9° C., will be 18.6° C., and with the air at 40.4° C., his stomach temperature will be 31.7° C.—a "reserve" of 23° F. at one extreme and 15° F. at the other. As is well known, when the temperature of a cold-blooded animal is reduced below about 45°, vital activities are practically suspended, and the animal passes into a stage of so-called suspended animation, or hibernation, in which he will remain for an almost indefinite period until the temperature is again raised. It must be remembered that this apparently utterly uncontrollable and irregular range of temperature is, under ordinary circumstances, much less wide than we might at first sight imagine. The large majority of cold-blooded animals are aquatic or subterranean in their habits, and the temperature of either large bodies of water or quite small ones, if these are in constant motion, seldom falls below 55° or rises above 70°. The total range of variation in the cold-blooded animals, falling a couple of degrees inside of these limits at either end, will not exceed 10° or 15°, and often no more than 6° or 8°. Moreover, these changes in water are, as a rule, made very slowly, so that the actual temperature of a given animal in a given ocean, lake, or river may be more constant for months at a stretch than that of his so-called constant-temperatured, or homoiothermal, kinsmen on dry land. The differences, then, between the mechanism of cold-blooded animals and that of warm-

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blooded are not so striking as supposed, and are evidently only in degree instead of kind. The cold-blooded animal has less power of controlling his bodily temperature and a wider range, the variations in which, however, take place very slowly and at much wider intervals of time. The heat-producing processes, whatever they may be, in his body are less than in our own, but they are apparently even more constant of weekly or monthly periods than ours are. Our temperature varies in daily excursions over a narrower range; his in month, seasonal, or semi-annual variations over a much wider range. The curve of our temperature is like that of the contraction of striated muscles; his like that of the nonstriated. Drawing a definite norm through the center of the variations for a year, our oscillations away from that median would be found to exceed his. We vary half a degree from that base-line twice a day; he 5° four times a year; and yet he is just as emphatically alive as we are, and capable of every possible form of activity of which we are capable. From the standpoint of absolute vital accomplishment, a worm is just as good as a man.

What, then, seems to be the chief distinction between the cold-blooded and the warm-blooded animals?

Mainly that the one seems capable of carrying out his vital activities with less waste of energy in the form of heat than the other. Both alike derive their energy from the potential energy contained in the complex molecules of the food, one transforming that potential into vital work with a less friction waste in the form of heat than the other. Would it not seem, in other words, that the cold-blooded animal is a more economic and less expensive machine than the warm-blooded?

Birds, with their high temperature and incessant activities, never hibernate, but solve the problem by migration, except, of course, a few hardy, flesh-, insect-, and seed-eaters.

That this is the state of affairs is strongly suggested by the proportional oxygen intake in cold-blooded and in different forms of warm-blooded animals. The warm, for instance, will carry out all our vital activities with an absorption of one and one-half grams of oxygen to every gram of his body-weight per diem.

The frog, with no higher degree of metabolic, but much higher motor, activity, requires from 2½ to 3½ grams; the human species requires from 9 to 12 grams; the dog 12 to 15, and birds 25 to 35 grams. The body temperature rises along the same scale, higher in the frog than in the worm, higher in the bird than in the mammal. But some one will say at once, of course the oxygen intake is in proportion to the amount of work performed; and is not this excess of work due to the combustion which this increased oxygen intake makes possible? In other words, is this not simply a gauge of the draft of the body-

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furnace under the vital engine? Some recent researches of Loeb upon the rôle of oxygen in cold-blooded animals throw a most interesting light upon this point. By a series of ingenious and elaborate experiments, whose conditions were so skillfully varied that possibility of error would seem to have been almost absolutely excluded, he came very clearly to the conclusion that the oxygen inhaled by cold-blooded animals is not used in carrying out the actual vital processes in the cells themselves, but simply in oxidizing and neutralizing certain poisonous waste-products formed in the course of these vital activities, and which would inhibit their further continuance if not so neutralized. Work could be kept up, in muscles entirely deprived of oxygen, for a considerable length of time, with the result that the accumulation of waste-products of motor metabolism would finally reach such a point as to inhibit further activity. Then the introduction of oxygenated blood into the vessel supplying the muscle would promptly change them to CO_2 and other comparatively nontoxic waste-products, and activity would be promptly resumed. Is it not highly probable that this is the rôle that oxygen plays in warm-blooded animals, not as a factor in combustion, with consequent production of heat and energy from that heat, but simply as an oxidizer and neutralizer of the poisonous products of vital metabolism. In other words, is not the heat formed in our bodies chiefly due to a process of waste destruction, a sort of garbage-burning?

Suppose we take the working hypothesis into the sick-room and test its application to the clinical facts and effects of fever. In the first place, it corresponds precisely with the fact upon which practically all investigators are now agreed, that the one change which is absolutely constant in fever is an increase in the output of nitrogen; some of it in the form of urea, more in that of uric acid or other urinary nitrogen. This means an increase of destructive metabolism in the tissues themselves, with the result that the energy derived from the food stored up in them, instead of being liberated in the relatively cool, smooth, and frictionless form of growth or secretion, is wasted in the form of heat. Fever is pathological, not in any sense an increase of the normal work of the body, with a consequent increase of temperature, such as would be produced in a steam engine by increasing the combustion under its boiler. The next thing with which fever is almost invariably associated is an impairment of function, almost to a degree of stoppage. The higher the temperature, the more completely the body is incapacitated. Bile, gastric juice, saliva, even perspiration, cease to be secreted; muscular activity sinks to the lowest level, and all the activities of the body become clogged and inactive; there is almost an utter stoppage of all useful metabolism, with sudden conver-

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sion of the energy used in that into the waste-product—heat. Further than this, it explains how, if the processes go a step further beyond the toxin by some magnificent high dosage greater, this stoppage of metabolism becomes so absolute that not even enough waste in the form of heat is produced to keep up the body temperature. This latter rapidly fails, the patient goes into a collapse and, if the process or progress be not steadily checked, dies. Under the influence of moderate doses of toxins the bodily engine is, to use a very rough simile, breaking itself to pieces, grinding out its cogs, producing friction instead of performing its natural and necessary work. Let the dose be excessive, and it may absolutely stop activity of every sort.

It also makes clear why there is not necessarily a constant increase of oxygen intake and CO_2 output in fever, inasmuch as the metabolism which is going on, instead of being in excess of the normal, is really below it. Instead of going on through to its normal end-products, which can be readily oxidized by the oxyhæmoglobin and given off as the harmless waste-product, carbonic acid, under the disturbing influences of the infection chiefly half-way products are formed and smaller amounts of this readily oxidizable material, the remainder of its energy being liberated in the form of useless heat. During vigorous and prolonged muscular activity in healthy individuals there is a marked increase in the amount of both oxygen intake and CO_2 output. But this is promptly met by an increase in respiratory and cutaneous activity, the relatively harmless waste-products rapidly escaping from the system, and, though there is a slight rise of temperature, there are none of the phenomena of fever. Not an excess of metabolism, but an abnormal form of it is the secret of fever.

It is also in agreement with the attitude toward and treatment of fever, to which our clinical experience has already led us, so trite as to make it almost superfluous to allude to it. If the increase of temperature is merely an indication of the amount of disturbance of the body mechanism by the infection and very largely of the amount and quality of the toxin, whether of *exo* or *endo* origin, we see at once why it is worse than useless to endeavor to treat the rise of temperature as such. We are perfectly justified in regarding it simply as an indication, a symptom of a toxic process—a symptom, which, by the way, may or may not be present, according to the character and degree of the intoxication—and in concentrating our attention solely upon the discovery and, if possible, the neutralization or elimination of the toxin.

We should never forget that a depression of temperature may be just as genuinely a sign of intoxication as an elevation, although it will less frequently occur.

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In certain infections, like cholera and consumption, and states, like diabetes and uræmia, it is nearly always present, if looked for. Our conceptions of both intoxication and infection need broadening.

This view-point helps us to see more clearly how a considerable part of what we are pleased to term a rise of temperature—though a part of it, and often the bulk of it, may be due to an actual increase in the amount of heat generated in the tissues—lies in the larger amounts of the heated blood of the internal organs thrown out towards the surface of the body.

The same parallelism obtains here that does in normal temperature regulation; it is most closely associated with an attempt at elimination of waste-products. In fever the amount of waste in the blood is raised to abnormal pitch; consequently, there is a desperate attempt on the part of the heart to drive it out to the surface, both cutaneous and pulmonary, for purposes of elimination. Part of the increase of heat, both of the surface and of the expired air from the lungs, is undoubtedly to be accounted for in this way. At the same time, by one of the *circuli vitrosi,* so familiar to us, the very toxins which so stimulate the heart will promptly paralyze both the general metabolism and that of the sweat-glands, of the respiratory epithelium, and of the glomeruli and tubules. It will even produce a contraction of the caliber of the superficial vessels, so that the skin, in a late stage of fever, becomes pale and sunken, instead of red and full. Any procedure, therefore, which will tend to relieve the surface conditions, restoring the tone of the cutaneous blood-vessels and arresting the paralysis of the sweat-glands and pulmonary alveoli, will be of value in assisting nature to get rid of the infectious materials. It has long been obvious that baths in typhoid and pneumonia, and packs in scarlet fever and measles, act in a far more potent and radical way than merely by lowering the temperature. It is by deepening the respirations, steadying the heart, increasing the flow of urine, and restoring the pulsations of the mesh of the great skin-heart, that they do good in fever, in a far higher degree than by a mere increasing of the escape of heat. And, to give even the devil his due, it is possible that the coal-tar products produce some of their antipyretic and relieving effects by promoting perspiration and mucous secretion, with their accompanying elimination, though probably more by either obtunding the cells to the effect of the toxins or by lessening reaction by depressing resisting power. They are unrivaled analgesics, fever-opiates, so to speak, without any of the distressing secretion-clogging after-effects of opium, and, if regarded and given *solely as such,* have a distinct and rather diversified field of usefulness. Always to be regarded as depressants and watched zealously for heart-effects in mild febrile attacks or in vigorous individuals, where the patient has,

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so to speak, plenty of resisting power to spare, they certainly do make him much more comfortable during the process of reaction; but in continued sieges, where every ounce of resisting-power is going to be needed, they are not only useless, but harmful.

The Therapeutics of Diseases Which Involve the Internal Secretions

INFLUENZA: ITS PATHOGENESIS AND TREATMENT.

By CHARLES E. de M. SAJOUS, M.D.

PHILADELPHIA.

The many phenomena witnessed in the course of influenza are ascribed to a toxin derived from Pfeiffer's bacillus and transmitted through fomites; but *how* does this poison affect the tissues so as to produce such a diversity of symptoms? Beyond the statement that we are dealing with an acute contagious disease characterized by no special anatomic lesions other than those due to its complications, that it is "an intoxication of some sort" which has "a selective effect on the central nervous system," text-books, as well as the general literature of the subject, afford no information upon this cardinal feature of our knowledge of the disease, although such knowledge can alone enable us to utilize intelligently the therapeutic resources at our command.

Here, as in the case of many other disorders, the prevailing confusion is due to the fact that the functions of the adrenals, the thyroid, and the pituitary body have been overlooked by investigators. My researches, which are embodied in the two volumes of my work on the "Internal Secretions," having enabled me to discern the nature of these functions, it is my purpose to describe, in this article, their relationship with the disease in question, and to show, furthermore, that it is through this relationship that the manner in which the influenza toxin produces its morbid effects and the process through which the latter can be counteracted by our familiar remedies can be explained.

Pathogenesis.—Referring the reader to the pages of "Internal Secretions" for the evidence upon which deductions submitted in this paper are based, I will first of all submit the definition which the researches referred to have imposed upon me:—

"Influenza" is due to a more or less marked paresis of the sympathetic center (caused probably by the toxin of Pfeiffer's bacillus) which in turn pro-

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duces a correspondingly marked dilation of the vessels this center governs, the arterioles.

This definition involves the conclusion that the sympathetic center is an autonomous entity, and that it governs the caliber of the smaller arteries. I have pointed out[1] that this center is located in the pituitary body and that its nerve-paths can be traced along the walls of the third ventricle to the bulb, the cord, etc.; that while the vasomotor nerves regulate the caliber of the larger vessels,[2] the sympathetic fibers govern that of the arterioles, the small terminal vessels which admit the blood into the capillaries of all tissues, including the skin and mucous membranes. If these few facts are clearly apprehended, the symptomatology of the disease may be readily understood.

The clinical phenomena of the disease are not all, however, ascribable to its specific morbid process—that described in the above definition; many of them are due to the defensive reaction the influenza evokes in the body. In other words, the symptoms must be divided into two classes: (1) those due to the paresis or functional depression of the sympathetic center, and (2) those evoked by the defensive or immunizing mechanism.

The first series of phenomena occurs when the protective reaction which entails the destruction of the influenza germs and their toxin is not sufficiently active or develops too slowly to prevent the depressing action of the toxin upon the sympathetic center. All the arterioles of the body being relaxed, the *vis a tergo* motion of the blood in the capillaries is reduced and the functional activity of the different organs is impaired.[3] This class of cases includes the type to which Tyson, in the last edition of his "Practice," refers in the following words: "Another mode of onset is by an extreme and *sudden prostration.* I have known a man to step from a railroad station, apparently well, and in the course of a few hundred yards become so weak as to have to take a car to reach his home, though not distant. This prostration is apt to be prolonged, even in mild cases, far beyond what seems reasonable." *Mental depression* is a frequent symptom. The *cardiac adynamia,* the *small, rapid,* and sometimes *irregular pulse* are due to the same cause, the torpidity of the blood-stream in their muscular elements being such as to impair greatly their oxygenation. Even *heart failure* may occur under these conditions. *Pallor* is a conspicuous symptom in such cases, especially in the *afebrile* type, which occurs in subjects whose adrenal system fails to react. The cardio-vascular adynamia, by slowing the pulmonary circulation, contributes an additional morbid factor to the dilated arterioles which project the blood into the alveolar capillaries, and aëration of

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [1] page 982; [2] page 1185; [3] page 1115.

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the blood being imperfectly performed, inadequate *dyspnœa,* and even *cyanosis,* may occur.

In the great majority of cases, however, the defensive process asserts itself from the outset. The pathogenic toxin, by exciting the test-organ,[4] increases the blood's asset in auto-antitoxin and phagocytes, and the most evident symptom of the protective function, fever, appears.[5] We are not dealing with a simple febrile process, however; but with a condition in which the presence in the blood of an excess of the substance which provokes fever, auto-antitoxin, coincides with the morbid dilation of the arterioles, due, as already stated, to the depressing action of the toxin upon the sympathetic center. The dilated arterioles, by admitting an excess of blood into the nasal mucosa, provoke *sneezing* and *acute coryza* and occasional *epistaxis,* and, moreover, as a rule, intense *frontal headache* owing to involvement of the mucous membrane of the frontal sinus. The same passive hyperæmia of the pharynx, larynx, and bronchi causes *pharyngitis* and a hard, paroxysmal *cough.* The dilated arterioles may sometimes be observed in the conjunctiva, when, besides the usual *lachrymation* and *suffusion,* there is *conjunctivitis.* The same condition of the cerebral vascular supply may give rise to *delirium* and even to phenomena resembling threatened apoplexy. It may be sufficiently marked in the alimentary canal to provoke *vomiting, gastric catarrh,* and *diarrhœa.* In the muscles, the presence of an excess of blood over-rich in auto-antitoxin gives rise to *myalgia* sufficiently severe, in some instances, to have suggested *rheumatism,* though the joints show no evidence of involvement. A corresponding condition of the nerves—all nerve elements being, in the light of my views, plasma channels[6]—by irritating the nervi nervorum may also cause *neuralgia* or cutaneous *hyperœsthesia.* In some instances the hyperæmia may be such as to cause *neuritis.*

The complications of influenza are in most instances the result of a condition of the sympathetic center approximating paralysis: the caliber of the arterioles being no longer controlled, the capillaries are gorged with blood. Hence the *pulmonary œdema* due to exudation of serum through the capillary walls, and the tendency to *broncho-pneumonia* due primarily to intense passive hyperæmia of the bronchial mucosa. *Sero-fibrinous pleurisy* and *empyema* are normal consequences of such a state of the vascular supply, especially in view of the fact that the serum exuded is an excellent culture medium for bacteria. The most formidable and frequent complication of influenza, *lobar pneumonia,* occurs, as a rule, late in the history of the disease, *i.e.,* after the

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [4] page 1037; [5] page 1072; [6] page 915.

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blood no longer contains a surplus of auto-antitoxin, or just enough to keep the proportion of ever-present bacteria in the respiratory tract within safe bounds. Exposure to cold and damp or any condition which lowers still further the temperature of the bronchial secretions, or rather of their proteolytic ferments,[7] and, therefore, their bactericidal activity, gives free sway to the pneumococcus, and pneumonia appears. *Appendicitis, otitis, cerebral abscess,* and other diseases due to bacteria may also develop, owing to the inadequate immunization, due, in turn, to the general prostration which impairs the functional activity of the adrenal system itself.

Therapeutics.—The morbid factors to be met in the light of the above facts are self-evident: we must counteract the depressing action of the influenza toxin upon the sympathetic center, and the dilation of the arterioles this entails. The *vis medicatrix naturæ* supplies weapons in the shape of auto-antitoxin[8] and phagocytes to antagonize the morbid process; our aim should be to aid the resources of Nature. We will see, however, that she sometimes overdoes her duty and that this is a source of complications, wrought by an excess of auto-antitoxin—the production of which it is within our power to reduce.[9]

What not to give suggests itself as a primary importance in this connection, in view of the prevailing empirical use of drugs. We should not, as some authors have held, give the nitrites,[10] which, as every one knows, are vasodilators; or aconite,[11] ipecac,[12] or other depressants. We should also avoid ergot,[13] which, by increasing intensely the vascular pressure, drives the blood into the dangerously engorged bronchial and serous membranes. Nor should we give the coal-tar products in sufficient doses to counteract the now recognized beneficial influences of moderate fever; nor even chloral hydrate,[14] the bromides,[15] or veronal, as hypnotics, all of which are known to inhibit the functional activity of the nerve-centers and to lower oxidation—our sheet-anchor in the destruction of pathogenic organisms.[16] And yet all these agents are referred to casually in literature as if experience had at all sanctioned their use. Need we wonder that "the German Committee which was formed after the epidemic of 1892, after obtaining the opinions of six thousand physicians in that country [and which would have applied as well to our own and any other country] stated in a general way that the use of drugs has been overdone in influenza, and that a doctor's intelligent advice was of infinitely more benefit than quantities of medicine"? In truth, the so-called "Medicine," upon which even the

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [7] page 857; [8] page 1134; [9] page 1307; [10] page 1354; [11] page 1347; [12] page 1378; [13] page 1383; [14] page 1318; [15] page 1338; [16] page 1099.

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modern doctor must pin his faith, gives him no opportunity to use his intelligence; it is not, therefore, the excessive use of drugs which must be criticized; but the blind use of agents that are not, to say the least, indicated. With Emerson, we may aptly say, however,

"The sure years reveal the deep remedial force that underlies all facts."

Even the empirical use of drugs—after all, a vast array of experiments—has shown, through the unmistakable benefit some have afforded in a large number of cases, that the morbid process can be controlled. A suggestive fact asserts itself in this connection, however; those agents which have proven of sufficient value to merit the continued confidence of the profession have been precisely those which enhance either the bacteriologic and antitoxic properties of the blood, or the functional activity of the sympathetic center.

The modes of invasion and the clinical history of influenza vary considerably in different cases and the treatment must be adjusted to the needs of each case and to the stage the disease has reached when the patient is first seen.

When the case is seen early and there are prostration, headache, etc., and the fever is not high, the toxin has already depressed the sympathetic center considerably. As this is due to the slowness with which the adrenal system reacts under the influence of the toxin, and to the resulting deficiency of auto-antitoxin and phagocytes in the blood, the most powerful stimulant of the adrenothyroid center, *mercury*, is required. *Calomel*[17] is the preferable salt in this connection; in an adult 1 grain should be given at once, and ¼ grain every half-hour thereafter until 3 grains have been taken. This augments promptly the bacteriolytic and antitoxic properties of the plasma and the pathogenic organism, and, its toxin being soon destroyed, the temperature falls. When there is pain, due, we have seen, to abnormal dilation of the arterioles, some agent capable of causing constriction of these vessels by exciting the sympathetic center is necessary. All analgesics owe their properties to such an action,[18] and may be considered, therefore, as the physiological antidotes to the influenza toxin. Hence the benefit obtained from *antipyrin*,[19] but only when given in small doses. Large doses, by causing excessive constriction of the arterioles, may not only arrest the blood-flow through them and thus provoke cyanosis, but the same effect on the cardiac arterioles may arrest the nutrition of this organ and cause heart-failure, especially in debilitated and elderly subjects. The doses should not exceed 5 grains in adults. *Acetanilid* acts similarly but more promptly in the same doses, although its effects are more fleeting.[20]

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [17] page 1388; [18] page 1270; [19] page 1282; [20] page 1290.

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This applies as well to *phenacetin*, another stimulant of the sympathetic center. When there are cough and other phenomena pointing to passive congestion of the laryngo-bronchial tract and of the pleura, *codeine*, which, besides causing constriction of the arterioles, enhances their propulsive activity, is preferable, in doses ranging from $^1/_{24}$ to $^1/_{10}$ grain. *Morphine*[21] should be reserved for cases attended with severe pain.

The *salicylates* and *salol*, which are endowed with analgesic properties, likewise excite the sympathetic center, but they stimulate in addition the adrenothyroid center, thus enhancing the antitoxic properties of the blood.[22] *Sodium salicylate* or *salol* may be given in 10-grain doses every three hours to adults. Large doses tend to cause hyperconstriction of the cardiac arterioles and should be avoided. A milder agent of this class is *sodium benzoate*; 10-grain doses every three hours are very effective when administered early, especially when the upper respiratory tract is involved.

Quinine, used extensively in the treatment of influenza, produces its effect by exciting both the vasomotor and sympathetic centers;[23] the arterioles are restored to their normal caliber, and the morbid effect of the toxin on the sympathetic center is counteracted. Unless, as Mossé believes, quinine is as toxic in the blood to the influenza bacillus as it is *in vitro*, there is good ground for the conclusion, however, that it does not shorten the duration of the disease, and that it is not as effective as the remedies previously described, since it does not enhance the bacteriolytic or antitoxic power of the plasma. Better effects are obtained from this agent, however, when a stimulant of the adrenal system, *strychnine*[24] for example, is given simultaneously, $^1/_{60}$ grain of the former with 2 grains of quinine every three hours.

Diaphoretics, which act on the sympathetic center in such a manner as to increase the propulsive activity of the arterioles while reducing their caliber (thus counteracting also the morbid action of the influenza toxin), have also been highly recommended. *Gelsemium* has been characterized "a specific" when the fluidextract is given in doses from ½ to 2 drops every half hour until its physiological effects appear. *Pilocarpine*,[25] $^1/_{48}$ grain, with *morphine* also in small doses, followed by quinine, has been recommended by Wood.

Among the accessory measures, the application of *sinapisms*, or better, a warm poultice composed of flaxseed meal and mustard, equal parts, in adults, and three of meal to one of mustard in children, greatly aids the effect of the codeine or morphine given simultaneously to contract the pulmonary arterioles. *Ammonium chloride*, which enhances markedly the osmotic properties of the blood by increasing its alkalinity, thus facilitating the transudation of fluids

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [21] page 1281; [22] page 1282; [23] page 1240; [24] page 1225; [25] page 1380.

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through the engorged pulmonary capillaries, is also valuable in the bronchitis that attends many cases, but not when there is a pleuritic effusion, which it tends to increase. For the coryza, the free use in the nostrils of a coarse spray of *saline solution* (one teaspoonful of common salt to a pint of water) is more effective, by increasing the osmosis of the mucous membrane, than any of the fancy combinations generally used.

When the temperature is 104° or above, the use of any agent to stimulate the adreno-thyroid center is contraindicated, since this temperature shows that the defensive process is fully active. The aim should be, therefore, to inhibit suffering and prevent complications. This is accomplished by the small analgesic doses (not exceeding 5 grains in adults) of *acetanilid*[26] or *phenacetin*, or the use of *codeia*[27] in cases attended with bronchial phenomena, since these agents both produce constriction of the arterioles, the morbid dilation of which is the cause of the headache, myalgia, etc., and of the complications.

When the temperature exceeds 105° F., the reaction of the adrenal system is such as to expose the red corpuscles and other cellular elements to dissolution by the excess of auto-antitoxin in the blood-stream. Alluding to endocarditis, I stated elsewhere[28] "whether simple, malignant, or chronic, it is always due to autolysis of the cardiac tissues by the blood when it contains a marked excess of auto-antitoxin and thyroidase." This applies as well to pleurisy and other complications occasionally observed in influenza, and to other diseases the pathogenesis of which is now admittedly unknown. Here, the indications mentioned in the foregoing paragraph are equally applicable, but an important practical feature is the free use—at least a quart daily—of *water* as a beverage (to increase the fluidity of the blood and facilitate enuresis), and an occasional large enema of *saline solution*[29] at 108° F. This sometimes produces a slight rise of temperature, but it lasts only an hour or two and the temperature soon drops to safe limits. If the hyperthermia reaches 106°, a *milk diet* is indicated besides these measures, and if it resists, *potassium bromide*[30] 15 grains, or the tincture of *veratrum viride*[31] (1905 U. S. P.) 10 minims, every three hours, is necessary. These drugs, by depressing the vasomotor center, cause general vaso-dilation and recession of the blood into the splanchnic area, thus reducing the pressure in the peripheral capillaries, the cardiac cavity, the lungs, and the nervous system, and also the chances of complications due to hyperthermia.

Prophylaxis During Health and Convalescence.—In the first volume of "Internal Secretions" I urged—and have since submitted ample evidence to

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [26] page 1290; [27] page 1281; [28] page 1860; [29] page 1367; [30] page 1338; [31] page 1159.

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the same effect—that "the power of the organism to antagonize the constitutional effects of pathogenic germs, their toxins, and other poisons, is directly proportionate, all else being equal, with the functional efficiency of the adrenal system." The special vulnerability of weaklings and elderly subjects to the disease affords further proof in this direction. The prophylactic remedies indicated are self-evident: those which tend to raise the functional activity of the adrenal system to its highest standard and keep it there. *Quinine,* we have seen, does not influence the adrenal system, but by increasing the vascular tension it keeps the capillaries of the respiratory tract well supplied with blood and the mucous membranes bathed with their auto-protective bactericidal secretions. If, however, we add thereto an adrenal stimulant, ***strychnine,*** or in debilitated subjects the syrup of *iodide of iron* or of *hydriodic acid,*[31] the protective action is greatly enhanced; 2 grains of quinine and $^1/_{40}$ grain of strychnine after meals afford, on the whole, the most satisfactory prophylactic. In anæmic young girls, who are thus ready victims of the influenza bacillus, 1 grain of *thyroid extract,* to enhance the functional activity of the adrenal system; $^1/_{60}$ grain *strychnine,*[32] to augment this action and enhance nutrition by increasing the vascular tension; and 2 grains of *Blaud's pill*—all given after meals—often succeed where other measures have failed.

All this applies as well to convalescence, to prevent recurrence and complications. The subnormal temperature observed is due to low blood-pressure incident upon the sympathetic paresis of the arterioles, a condition which the quinine and strychnine usually correct promptly. The diet should be liberal and the patient refrain from going out-of-doors until his temperature has returned to normal. In adults, a short course of *strychnine* followed by one of *digitaline* in full doses, thus stimulating simultaneously both the adrenal system and the sympathetic center, often proves very effective when the debility is marked.

Editorial

THE ANNULMENT OF THE PURE FOOD AND DRUG LAW IN SOUTH DAKOTA.

THE Kentucky State Medical Association, at their recent meeting, adopted resolutions approving the work of the Council of Pharmacy and Chemistry of the American Medical Association, whose province, as is now well known, is

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [31] page 1159; [32] page 1225.

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"to examine pharmaceutical products in order to be able to inform the profession as to the actual composition of said products," and to weed out fraudulent preparations, secret remedies, etc. The language of the Principles of Medical Ethics, to the effect that "it is equally derogatory to professional character for physicians * * * to dispense, or promote the use of, secret medicines, for if such nostrums are of real efficacy any concealment regarding them is inconsistent with beneficence and professional liberality; and, if mystery alone give them notoriety, such craft implies either disgraceful ignorance or fraudulent avarice," is also endorsed. Journals are enjoined to free their columns of nostrum advertisements, and the medical profession, which is stated to have "erred quite as much in this nostrum matter as the medical journalists," is asked to co-operate by using as guide "the abridged United States Pharmacopeia and Formulary" and the list of new and non-official remedies approved by the Council of Pharmacy.

Unfortunately, by far the most important point gained during the campaign so far—the passage of the Food and Drugs Act of June 30, 1906—has received, recently, a severe setback, viz., the annulment, by the Supreme Court of South Dakota, of the provisions of the State pure food law requiring patent medicine manufacturers to publish upon the labels of their preparations the formula of the remedy sold. If all other States follow this evil precedent, the whole country will again be flooded with nostrums of unknown composition, many of them harmful when used indiscriminately. If such proves to be the case, the course to be adopted by the practicing physician is plain: he need only use proprietary remedies whose owners continue to publish the formula of their preparations, regardless of any further miscarriage of justice.

We should bear in mind, in this connection, that, as stated in the pamphlet on unethical preparations, the Council of Pharmacy recognizes that "the manufacturer should be protected when he has originated *something of value* to the public or to the profession." It must be said, however, that the wisdom of accepting as final on this score the decisions of a Council composed almost entirely of pharmacists, chemists, and laboratory investigators—especially in view of their arbitrary refusal to publish the answers of those they attack, the Abbott Company, for instance—is open to doubt. Nevertheless, the foregoing quotation indicates that an important feature of the whole question is not overlooked, viz., the possibility that some of the proprietary preparations ultimately prove, as has already happened in several instances, of decided clinical value. Professor William H. Welch, of Johns Hopkins, remarked, in his recent address at Chicago University: "The empiric method of discovery by trial and error has

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its glorious triumphs as well as the scientific, and is not to be disdained. To it we owe such beneficial discoveries as the curative properties of quinine in malaria, vaccination against smallpox, and the anæsthetic uses of ether and chloroform." But a knowledge of the composition of any agent is obviously the *sine qua non* of the test, and it is he who refuses to divulge the constituents of his wares who defies the principles of medical ethics. It is to such a man—the "secret remedy" man—that the advertising columns of all journals should be closed, and it is the class of drug he sells that the ethical physician should never use.

J. MADISON TAYLOR.

THE INTERNAL SECRETIONS IN DISEASE.

IN its December issue, the New England Medical Monthly summarized, in the following words, the present status of a question which has attracted considerable attention: "The opsonic index theory, like others of recent years, has thus far failed to meet the expectation of the profession, and even Wright and its other advocates do not seem able to furnish any practical deductions which can be utilized in the treatment of disease. In tubercular lesions the way has not been made easier, and we do not recall any instances of bacterial infection in which the results have been at all uniform. Tests of the serum give, evidently, different results, and clinical findings do not support or verify the so-called opsonic data.

"While the theory is just now of no practical value, the investigations which are being prosecuted on these lines may lead to something tangible, and hence are to be encouraged. Although the experiments of Trudeau and others with tuberculin and the use of the mixed toxins by Coley and his followers have not as yet given definite and uniform results, there is reason to believe that these men are on the right track and may yet have some gratifying reports to offer. The general practitioner would do well to restrain his enthusiasm and desire for novelties as regards these cases of grave infection, lest he neglect the older and more or less effective methods which have stood the tests of time and experience."

The cause of the disappointing results referred to is not difficult to find. Over three years ago (April, 1904), I wrote in this journal, referring to Professor Wright's labors: "Pathologists will continue to work in the dark, as they have now been doing several years, until they realize that the very substances to which various names have been given—Buchner's alexins, Ehrlich's complement, Metchnikoff's cytase, Ehrlich's intermediary body or ambocepter, Bordet's sensitizing substance, etc,—are internal secretions in the true sense of

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the word: products of ductless glands." Considerable work done since has only served to confirm this conclusion, and I do not hesitate to state that this applies as well to the whole field of pathology.

The present issue of the MONTHLY CYCLOPÆDIA contains an able paper by our distinguished collaborator, Dr. Woods Hutchinson, upon a prominent phase of immunity, fever, which he studies in the light of prevailing views, *i.e.*, without the functions of the ductless glands—or, rather, of their internal secretions—as factors of the problem. The categorical admission that "we do not know what fever means, and are still in the dark as to the mechanism of its production," coupled with the recognition that "an enormous mass of thoughtful, painstaking, and conscientious research has been done upon the problem," speaks for itself: How is it possible that so much labor upon so commonplace a symptom should have proven so sterile of results? That a great fundamental flaw renders a logical co-ordination of the multitude of solidly established facts available impossible, is plain. In an early issue of this journal I will show that the heat-regulating mechanism to which Dr. Hutchinson refers as "one of the wonders of the animal body, so exquisitely responsive, so elastic, so resourceful, that it would take a whole chapter to describe even the barest outline of the more important feats of which it is capable," is what I have termed the "adrenal system." Its functions, we will see, not only harmonize all established facts, clinical and experimental, concerning fever, but they extricate the whole question of immunity from the field of pure conjecture.

The advice given by the editorial writer of our esteemed contemporary not to neglect the remedies which have stood the test of time, those of our pharmacopæia, coincides with similar oft-repeated injunctions of our own. As shown in the article on Influenza published in this number, our standard remedies merit our confidence in the highest sense of the word, when to the data furnished by a host of able and conscientious observers, experimental and clinical, during the last fifty years and more, are added those upon the internal secretions.

C. E. DE M. SAJOUS.

Cyclopædia of Current Literature

ABORTION.

Abortion is defined by the author as the act whereby an immature and non-viable product of conception is dislodged from the maternal body. External hæmorrhage is not only the most important, but the most common premonitory symptom of abortion, and,

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although it may be induced, atony of the uterus is its most frequent cause. Under such circumstances it may appear as early as the sixth week of pregnancy, about the time when the serotinal vessels begin to undergo rapid enlargement in response to the stimulation of the placental chorion. Hæmorrhage may also be due to deficiency of calcium and potassium in the muscular substance of the uterus, or to the presence of some toxic material impairing the tone and responsive power of the organ. In such cases potassium iodide and calcium chloride are given to remove deleterious substances or to supply those which are deficient. When the muscular energy of the uterus is impaired, there is often enfeeblement of the nerve energy also, and strychnine, arsenic, digitalis, or phosphorus may be given with benefit. Pain is the other all-important prodromal symptom of abortion. It may be noted when the uterus does not adequately respond to and fails to expand correlatively with the developing ovum. The uterine tissues, again, may be responsive enough, but they may be restrained by adhesions. Abortion not infrequently results from physical or mental shock, or a combination of both influences. After the tenth or twelfth week of pregnancy the uterus may be injured directly by a blow on the lower abdomen, and abortion may more or less quickly ensue. But usually there is extravasation of blood from rupture of the functionally active maternal vessels; the blood may never make its escape externally, and pain may be the only symptom. No drugs should be given in such cases; absolute rest is the best treatment. Necrosis of the amniochorion is a very rare cause of abortion, and it determines this event by allowing the amniotic fluid to escape. J. Oliver (British Medical Journal, November 30, 1907.)

ADENOIDS, PAINLESS REMOVAL OF.

The writer thrusts into the posterior wall of the pharynx, as high as possible after elevating the soft palate with a soft hook, a hypodermic needle, 10 centimeters long, after spraying with cocaine, and injects a mixture of cocaine and adrenalin. The needle is introduced through a blunt cannula as a guide. After ten minutes the operation will be painless. For the tonsils, if the child is submissive, about ten drops of a 1 per cent. or even 0.5 per cent. solution of cocaine with adrenalin (1 to 4000) is injected all around the periphery of the tonsil, and produces complete insensibility. Pain, however, is felt when strong traction is made, especially with the snare. H. Gradle (Chicago Medical Recorder, November 15, 1907).

ALCOHOL, PATHOLOGICAL CHANGES PRODUCED BY.

The author describes experiments made by injecting alcohol of various strengths subcutaneously in dogs, rabbits, and guinea pigs, with a view to determining particularly the effect of the drug in producing cirrhosis of the liver. These experiments do not afford any confirmation of the clinical view that the chronic administration of alcohol leads to severe degenerative or cirrhotic changes of the parenchymatous organ. The only pathological finding in the experiment animals in the cases of acute fatal intoxication consisted in the presence of numerous hæmorrhagic erosions of the gastric mucosa. Other authors have observed these and ascribed them to the use of the stomach tube employed in administering the drug, but the writer used the subcutaneous method of ad-

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ministration. In a large series of autopsies performed during his fifteen years of service in Königsberg, he found that only 5 or 6 per cent. of the alcoholics that came to the post-morten table presented cirrhotic livers, and this fact, together with the negative results of animal experimentation, lead the writer to agree with Hansemann that the abuse of alcohol is only a predisposing and not an etiological factor in the causation of cirrhosis of the liver. He suggests that in such cases the functions of the gastrointestinal wall may be impaired so that the absorption of toxic products that may possibly have the effect of favoring cirrhotic changes is rendered possible. The absence of cirrhosis in animals subjected to chronic intoxication with alcohol might then be explained on the assumption that such toxic bodies are not formed in the gastrointestinal canal of animals. Baumgarten (Berliner klinische Wochenschrift, October 21, 1907; Medical Record, November 16, 1907.)

ANTERIOR POLIOMYELITIS IN THE ADULT.

The symptoms of anterior poliomyelitis are overlooked, not because they vary materially from the same disease in infancy, but because this diagnosis does not enter the mind of the practitioner in case the patient is an adult, whereas it is ever present when the patient is a child. In the adult appears the same stage of fever, during which signs of irritation appear, and during which the destruction of anterior spinal gray matter produces relaxed paralysis of various muscle groups, without loss of sensation or sphincter control (temporary loss of sphincter control did not occur, however, in the first case reported by the writer); there are the same favorable prognosis as regards health and the same gradual disappearance of paralysis with more or less permanent residue. The essential features point, in the adult as in the infant, to an infectious process, or more or less diffuse onset, but having for its chief point of attack the anterior gray matter of the cord, to which region the ultimate injury is limited.

The author's general conclusions are that the disease is not rare in young adults. The real seat of the infection is apt to be obscured by temporary symptoms pointing to the meninges and nerve sheaths. The implication of the meninges is probably independent, not an extension from the substance of the cord. The onset of paralysis is more retarded in adults than in infants, and the extension of paralysis from one group to the other is less immediate. No extension of paralysis is to be expected after fever has subsided. Prolonged rest of the affected muscles is desirable, as well as early orthopædic measures. G. L. Walton (Boston Medical and Surgical Journal, November 28, 1907).

ARTERIOSCLEROSIS, INCIPIENT, SIGNS OF.

The writer presents a list of early signs of arteriosclerosis which allow its differentiation in its incipiency, while there is still a prospect of arresting its progress by appropriate measures. The symptoms are the result of slight and variable disturbances in the local circulation. The arteries are less elastic, contracting less readily, and the course of the blood is not normally regulated. In some cases these symptoms appear only after effort. There may be general disturbances; the patient tires more easily, and is weary and depressed, with intolerance occasionally of alcohol or tobacco. Vasomotor, nervous, respiratory, ocular,

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or auditory disturbances are also common, with epistaxis, œdema, arterial hypertension, or heart and kidney symptoms. Among the nervous troubles may be a lessened aptitude for physical and mental work, disinclination to commence a new task, transient loss of memory or a slight, transient difficulty in speech. The patients sometimes display unusual irritability or somnolency. Headache is a frequent early sign, especially morning heaviness and oppression in the head, becoming actual headache in the course of the day, sometimes pulsating. The pain is generally located high on both sides and sometimes comes on or is aggravated by mental or physical effort or ingestion of alcohol. The mere fact of concentrating the attention is sometimes enough to arouse the pain. The writer calls this symptom "the sign of the painful thought." Continuous headache persisting after correction of refraction errors is probably due to atheroma or arteriosclerosis.

The patients sometimes complain also of a transient tingling or heaviness in the arms or legs. Intense and persisting neuralgia is not infrequent, intercostal, trigeminal, or in the legs, but the pain does not follow the course of the nerves, and there are occasional intermissions. Sometimes the pain alternates with tingling or itching in the limbs; it is not modified by pressure, and there are no other sensory disturbances in the regions involved.

Vertigo is one of the warning symptoms of arteriosclerosis. Sometimes the patient feels dizzy when he stands up after reclining, or there may be vague impression that the floor is not solid. Sometimes he feels as if something was moving in his brain. All other affections that might induce vertigo must of course be excluded. The patient generally finds it impossible to go to sleep, and after tossing restlessly for hours, sleeps tardily and briefly, his slumber being restless and interrupted by subdelirium.

When neurasthenia is observed in a previously healthy person between 45 and 50 years old, and no other cause can be assigned for it, incipient arteriosclerosis should be suspected. This tardy neurasthenia frequently accompanies cancer, tuberculosis, diabetes, and incipient general paralysis, as well as incipient arteriosclerosis. The neurasthenia is generally of a mild form, and the arteriosclerotic lesions are more functional than organic in this early stage.

Another early sign of arteriosclerosis is the exceptionally slow return to normal after a traumatism. Spasmodic phenomena in the arteries of the retina are also among the signs of incipient arteriosclerosis, as also thrombosis of the central artery, atrophy of the macula and central scotoma, or circumscribed atrophy of the optic nerve. Slight dyspnœa on effort is an important sign, as also spasmodic severe dyspnœa, which generally follows errors in diet. As a rule, such patients have emphysema. Epistaxis is another important early sign; it is best not to check it unless the hæmorrhage is excessive, as it is a valuable safety valve for high arterial tension. Slight œdema of the legs, especially toward evening, is another sign. The blood-pressure is not always high during the early stages of arteriosclerosis, but when it is, and the high pressure persists, arteriosclerosis and atheroma should be surmised, especially when combined with some of the other signs mentioned above.

The presence of kidney disease does not testify against arteriosclerosis, and

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it may even be the cause of the latter. In one of the author's cases a young woman had a mild kidney involvement during an attack of scarlet fever. There were slight albuminuria, a little œdema of the eyelids, and a gallop rhythm. These symptoms lasted only a week, but the radial arteries soon became hard to the touch and can now be rolled under the finger. There is no other sign of atheroma, but it is unquestionable that the changes in the kidney have left their impress on the arterial system. O. Josué (Presse médicale, October 23, 1907; Journal of the American Medical Association, December 7, 1907).

ASPHYXIA NEONATORUM.

Asphyxia is divided by the writer into three degrees: (1) Temporary apnœa, due to slight mechanical obstruction or a brief operation of any one or more of the ordinary causes of asphyxia. (2) Asphyxia livida, in which the heart-beat is slow but fairly strong and regular, the cord usually being full, deeply hued, and pulsating vigorously. (3) Asphyxia pallida, with dilated pupils, slow and feeble heart-beat, sinking temperature, muscular relaxation, and a pale and non-pulsating cord.

When a child is born in a state of asphyxia, the indications for treatment are: (1) Removal of obstacles to respiration; (2) reflex stimulation of the respiratory center; (3) aëration by artificial means; (4) prevention of loss of body-heat; (5) stimulation of the heart and raising of the blood-pressure. The writer considers that the cord should be cut at once in all cases of asphyxia. In the livid stage additional blood is unnecessary; in the pallid stage the cord contents do not circulate, and in either stage the child's removal is desirable for the adoption of other measures.

The writer's method of restoring respiration is described by him as follows: "As soon as the head is born, swab out the pharynx with the finger wrapped with gauze, and squeeze the contents from the nose. After delivery, invert the child. Slap its buttocks and back briskly a few times, dash a little cold water on it and blow into its face. Perform Prochownik's compression of the chest for a half minute. Suck out the mucus from the pharynx of the child with a catheter having a pipette. Blow into the child's mouth, compressing the trachea and pressing gently on the stomach. All these manœuvres are done to better advantage with an assistant's help. It will rarely happen, even if no trained nurse or assistant is present, that some one can not be pressed into service. Now ligate or clamp the cord and cut it. Transfer the child at once to a large tub containing eight inches of water at 108° F. Listen to the heart-beat, so that improvement or retardation later may be estimated. Perform Byrd's method of artificial respiration without inverting the child at the end of expiration. From time to time mucus should be wiped from the nose and mouth as squeezed out from the air passages. While Byrd's method is being done, an assistant, if present, should make rhythmic traction on the tongue. This can be done readily without interrupting the Byrd treatment. The operator can readily pass the index finger of the left hand into the rectum, and from time to time this should be done.

"After four minutes, if previous injury does not contraindicate, remove the child from the tub and perform Schultze's method for a minute, giving ten swings in that time. By this time, unless the case is a very bad one, some signs of restoration of breathing are

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usually present. If the infant has improved in color and started breathing, however weakly, return it to the hot water, massaging its breasts, and watch the efforts at breathing. If this is shallow, plunge the child into a tub of cold water for a second. If the breathing improves, the case is doing well, and Byrd's method in the tub, with an occasional reflex stimulation by stretching of the anus, will soon bring about satisfactory breathing. All the reflexes now being good, a dip into cold water and a few slaps will probably cause a genuine cry. Continue the Byrd method, however, timing the movements of inspiration and expiration with the child's until both sides of the chest expand well.

"If the Schultze swings, however, have not caused any respiratory efforts, return the child to the tub and examine the heart. If it has materially lost ground, inject hypodermically a solution of strychnine and brandy, which should have been prepared while the swinging was being done. Now perform mouth to mouth insufflation. If improvement follows, continue with this method until the tone is good, and then stimulate breathing by the reflexes. If, however, no betterment is observed, continue with the first routine, the Byrd method combined with the Laborde, alternating after four minutes with the Schultze method for a minute. Omit the latter, however, if the heart is markedly weak, as the additional shock and chilling will not be well borne. Repeat the hypodermic injections at fifteen-minute intervals, and keep up the manœuvers in the tub until breathing is restored or the heart stops beating. Even after an hour of asphyxia a happy result may be obtained." I. L. Hill (New York Medical Journal, November 9, 1907.)

BLACKWATER FEVER.

The group of symptoms known as blackwater fever, according to the writer, is due to a special condition of the blood, produced by repeated attacks of malaria —a condition in which, possibly through the long-continued strain on the blood-making organs, there is a lowered vitality of the red blood-cells, the connection between the hæmoglobin and the stroma is weakened, and then some exciting cause produces a sudden hæmolysis, with the resulting phenomena of blackwater fever.

The exciting cause is in some instances undoubtedly quinine, in others chill (as in the paroxysmal hæmoglobinuria of temperate climates), and in others toxins absorbed from the intestinal canal. After the hæmolysis has taken place, the action of dissolved hæmoglobin in the blood must be dealt with; it is irritating and produces various secondary symptoms, among them jaundice and nephritis. It is, therefore, evident that, when a case of blackwater fever comes under observation, the mischief is already done.

In treatment two things must be dealt with—the loss of blood, which may be enormous, and the presence of hæmoglobin, dissolved in the plasma. The indications for treatment are as follows: (1) Get rid of the morbid products. Empty the intestinal canal thoroughly with calomel. This relieves the liver and has an antiseptic action on the intestinal canal. Aid elimination by the skin and kidneys by means of the administration of diuretics and diaphoretics. But where vomiting is constant, the stomach must be left severely alone, a large, high, hot enema being given each morning. (2) Counteract the malarial element in the attack. If malarial parasites are found in the peripheral circulation, at least one dose of quinine should be given, preferably by hypodermic injection. If

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there is any recurrence of the hæmoglobinuria, it should not be repeated. (3) Support the patient's strength, but avoid over-stimulation with alcohol. (4) Alleviate any distressing symptoms. Of these, vomiting is the most constant, and it is best relieved by washing out the stomach, if the ordinary remedies (oxalate of cerium, etc.) fail. For the sleeplessness, morphine should be given.

The after-treatment is, of course, directed against the anæmia. Arsenic and a change of climate are most beneficial. A single attack of blackwater fever can be completely recovered from and leave no ill effects. W. T. Prout (British Medical Journal, November 9, 1907.)

CANCER RECURRENCE.

As the result of his observations, the writer has concluded that carcinoma is a highly infectious disease. Not that there is any evidence to support the fact of its communicability between one person and another, but that once an individual becomes the subject of cancer, there is not only the liability of its spreading by a well-defined infective process, but also in those cases where the surgeon attempts to remove the disease there is a risk of reinfecting his patient from the growth which he is endeavoring to remove. Cancerous infection of wounds is, therefore, of comparatively frequent occurrence, but, unless the infection manifests itself early, the proof is easily overlooked. Cancer infection during operation is responsible for many of the cases of recurrent nodules in the site of operation wounds, and suture-hole infection is exceedingly common. Cancer infection is probably the reason why chronic carcinomatous growths so frequently run a very acute course after attempted operations. In the parent growth the cells are more or less encapsulated in fibrous tissue, but some cells escape during operation and find a resting-place in the wound, which is comparatively unprepared to meet and to resist the invasion. The question of cancerous infection of wounds during operation is a real and exceedingly grave danger and one of the utmost importance. Moreover, it is a danger that cannot be too carefully guarded against, and any failure to avoid it has an important bearing on the question of cancer recurrence. C. Ryall (Lancet, November 9, 1907.)

CONSUMPTION, VASCULAR STRIÆ, A MEANS OF RECOGNITION OF COMMENCING.

The writer describes vascular striæ which he has observed over the apex of the lung in cases of incipient tuberculosis, and asserts that the presence of these striæ in the skin over the apex of the lung shows that tuberculous inflammation exists or has existed in the neighboring portions of the lung and is pathognomic. He states that the presence of the striæ shows involvement of the superficial portions of the lung; that, when these striæ are absent in cases of evident pulmonary tuberculosis, the inflammation involves the deeper parts of the lung tissue and not the superficial; that the extent of the tuberculous focus can be estimated from the mass and distribution of the striæ; that the color and form of the striæ show the age of the inflammation; that the intensity of the inflammation may be estimated from the color, form, and massing of the striæ, and that a mixture of striæ of different kinds shows the successive existence of old and new inflammations. Francke (Münchener medizinische Wochenschrift, November 12, 1907; New York Medical Journal, December 14, 1907.)

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DELIRIUM AND DELIRIOUS STATES.

In speaking of this subject, the writer remarks about the treatment that it should be directed to the cause, and when the condition is due to the ingestion of a toxic substance, as alcohol, bromides, etc., this cause may be removed. It is to be remembered that a condition is frequently met with which is primarily physical, and not mental, and the treatment is somewhat the same as that of any acute disease, the chief indications being to keep up the strength of the patient by appropriate nourishment and to prevent exhaustion from the motor unrest, which is frequently extreme. Of quieting measures, the continuous warm bath is generally preferable to soporific drugs. By this method —which is warmly advocated by Kraepelin—the patient is kept in a warm bath at 92° F. to 95° F., until the restlessness subsides, and is then put to bed, when he frequently falls asleep. When restlessness reappears, he is again placed in the bath, and this procedure is continued until his quiet becomes permanent. This method is particularly useful in delirium tremens; but in asthenic conditions caution must be used, and the patient's pulse and general condition carefully watched. In some cases soporific drugs may be combined with the bath treatment. Heart stimulants, as alcohol, strychnine, and digitalis, may be indicated. In alcohol delirium, however, alcohol should be avoided, and if polyneuritis exists, even small doses given as a stimulant may be distinctly harmful. When a delirium tremens is threatened during enforced abstinence in the course of an acute illness in an alcoholic person, the case is somewhat different. On this point a diversity of opinion exists, but the author believes that small doses of alcohol are here beneficial. In senile delirium, also, the effect of alcohol may be distinctly good, being not only stimulative, but sedative as well. Nourishment should be given at regular intervals, as in any acute illness. If, owing to the mental condition, the patient cannot be made to take the necessary amount, tube feeding may become necessary. H. M. Swift (Boston Medical and Surgical Journal, November 21, 1907).

ECTOPIC GESTATION.

Ectopic gestation in almost every instance occurs primarily in the tube, and if found as intraligamentous, abdominal, or tubo-ovarian, it has followed a primary rupture of the tube. It occurs in women, largely, who have long been sterile or who give some history of a catarrhal salpingitis.

Symptoms before rupture are: Missed menstrual period, followed by irregular flowing or irregular and prolonged bloody discharge. Pain, feeling of weight, and soreness in pelvis, followed by sudden sharp attacks of pain, intermittent in character. Cervix softened, dilated; uterus enlarged moderately, often a bloody vaginal discharge; presence of a mass to one side of the uterus, tender on pressure. A large majority of the patients consulted physicians previous to rupture.

Symptoms of primary rupture are: Sudden great pain, as if something had torn; faintness; collapse; if hæmorrhage is great, collapse is profound; pallor; rapid, thready pulse; subnormal temperature; shallow respiration; thirst. Examination shows abdominal rigidity; a tumor mass in cul de sac of a boggy feeling; uterus enlarged; cervix soft, dilated; bloody vaginal discharge.

Prognosis is bad for mother if unoperated on in at least 70 per cent. Opera-

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tion, if done in time, will save 92 to 95 per cent. of all cases. If the diagnosis is not positive before rupture, consultation should take place, and, if necessary, examination under anæsthesia, and, if diagnosis is confirmed, operation should be performed at once. After rupture immediate operation should take place, if hæmorrhage gives signs of continuance; if signs of abating hæmorrhage, after shock is recovered from, operation should be done; but the surgeon must be prepared to operate immediately if bleeding again occurs. The operation should be preferably through the abdomen, only using the vaginal approach in some selected cases. Before the fourth month the products of gestation should always be removed; it is much the safer plan for the mother; the chances of a healthy living child are very remote. S. E. Getty (New York Medical Journal, December 14, 1907.)

EPITHELIOMA AND X-RAYS.

The favorable effect of Roentgen ray on epithelioma is indisputable, but Roentgen ray treatment must not be considered in a category by itself, but must be looked on as an alternative or as an addition to other methods. The success of the Roentgen ray treatment depends upon biological differences in the various kinds of epithelioma. To aid the effect produced by the Roentgen ray treatment, small operations may be done and the cautery applied according to the nature of the case. In those cases in which no favorable influence is produced by the Roentgen rays at the latest after the fourth or fifth sitting, this treatment must be discontinued, as little more is to be expected from it. The intervals between the single sittings must not be too long; a more active Roentgen light—medium soft tube—with, of course, a careful covering of the healthy parts of the skin, is to be continued In the case of surgical operations a subsequent application of rays is eventually desirable. It is of especial importance to lay stress on the fact that by the application of Roentgen rays the patient is saved from an operation, and the result produced by Roentgen ray treatment is not only equally good as regards the cure, but much better as regards the subsequent appearance. E. Schiff (Lancet, November 23, 1907).

FEVER, CLINICAL OBSERVATIONS ON THE ORIGIN OF.

The author declares that the maintenance of health depends on the integrity of the internal secretions of the ductless glands, especially the thyroid. Persons and animals deprived of it suffer from all sorts of infection. He then goes on to show that Graves's disease and fever have similar clinical manifestations, as rapid pulse, thirst, sensation of heat; after awhile abundant perspiration, etc. Vasodilation and sweating can be produced by thyroid feeding. This latter symptom of fever is a device of nature for eliminating toxic materials. Its occurrence is generally followed by an improvement in the general condition. The diarrhœa of some infectious diseases is a typical Graves's symptom. To complete the analogy, the author mentions also toxic decomposition of proteins, loss of weight, muscular weakness and fever, and increased urea elimination. In Graves's disease there are increased oxidation, possible delirium, cutaneous eruption, etc. Fever symptoms, therefore, are due in a general way to increased activity. Consequently, it seems to the author that we are justified in believing that fever is a beneficient institution of our organism which is pro-

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duced by an increased activity of the thyroid gland as a reaction against toxic products and poisons in general. The symptoms of fever are the expression of this increased activity, and they are directed towards the elimination of noxious elements. It would be unreasonable to oppose this spontaneous healing tendency of nature by fighting these salutary symptoms, unless there be hyperpyrexia. A. Lorand (Lancet, November 9, 1907).

GANGRENE IN MALARIA.

Malaria may be considered a direct or a provocative agent of symmetrical gangrene of the skin. The skin lesion differs somewhat from the classical description of Raynaud. Tertian and quartan malaria may occur simultaneously, but such a combination is exceedingly rare. Usually one type predominates. Certain peculiar psychoses may be present in malaria and are probably of toxic origin. E. J. Wood (Journal of the American Medical Association, December 7, 1907).

GASTRIC AND DUODENAL ULCER.

Perforated gastric or duodenal ulcer should be curable in a good percentage of cases if promptly recognized, the mortality being in direct ratio to the time allowed to elapse prior to operation. Perforation is apt to occur without any especial warning or exacerbation of gastric symptoms, and often without any previous history of such symptoms.

The operative procedure should be simple, quick, and accompanied by as little manipulation of intra-abdominal contents as possible. Closure of the perforation by suture without attempt at freshening the edges or excision of the ulcer is generally sufficient. Gastroenterostomy is better held in reserve as a secondary operation, and may never be required. C. H. Peck (Medical Record, December 7, 1907).

HYSTERIA.

The tendency of late has been unduly to extend the conception of hysteria and to apply definitions that are fundamentally defective. To claim disintegration as the essential feature of hysteria seems to the writer an error, and Babinski's view that the symptoms of hysteria owe their origin entirely to suggestions from without, is also open to criticism as ignoring the cardinal pathologic feature, the pathologic suggestibility of hysteria. Three cardinal neuroses exist, neurasthenia, hysteria, and hypochondria, widely differing in their clinical features. Then there are further the neurasthenoid states prodromal to the fully developed psychoses and the symptomatic neurasthenia accompanying and dependent on various visceral and general diseases, organic and functional, in which the symptoms are never those of true neurasthenia. The writer at some length goes into the description of the fundamental distinctions between neurasthenia, hysteria, and hypochondria. In the first named the essential symptoms are always those of chronic and persistent fatigue, while the adventitious symptoms are the secondary outgrowths of this fatigue. The physical symptoms of uncertainty of movement, subjective dizziness and headache are secondary consequences of this fatigue, as are also the psychic ones of deficient will power, indecision, irritability, and fear secondary to the mental fatigue with its primary symptoms of incapacity for sustained effort and attention. In hysteria, all the symptoms have a distinct impress of their psychic origin. Motor and sensory phenomena go together, without

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regard to nerve supply or spinal segmentation; if an arm is paralyzed it is also anæsthetic; the whole member is elided from the field of consciousness. Mentally, there is unusual emotional mobility with defective inhibition, an exaggerated susceptibility to impressions while fatigue symptoms are wanting. The exhaustion, headache, backache, and muscular weakness of neurasthenia differ widely from the localized palsies and anæsthesias of hysteria. The two symptom groups are directly opposed to each other. Neurasthenia is the fatigue neurosis; hysteria is the neurosis of pathologic susceptibility. Hypochondria differs from both, the fatigue symptoms of neurasthenia and the stigmata of hysteria are conspicuously absent and the cardinal symptom is a general disturbance of the general somatic sense; that is, the sensation derived from the body as a whole. The patient's normal feeling of well-being is profoundly disturbed, and he usually seeks an explanation of his condition in some disease of one or more organs.

In conclusion, the writer notices Prince's conception of hysteria as a form of psychic disintegration and that of Babinski that it is a special psychic state manifesting itself by disturbances that can be made to appear and disappear by suggestion. He holds that while disintegration may be a late phenomenon of hysteria in a limited number of cases, it is not essentially a process of disintegration. Babinski, in his explanation, leaves too much out of consideration the pathologic nature of the susceptibility, and it utterly fails to account for some of the more remarkable features, such as the unilateral predominance of some of the symptoms, the peculiar association of some of the phenomena, etc. F. X. Dercum (Journal of the American Medical Association, November 23, 1907).

MEASLES AND RUBELLA.

The frequent errors of diagnosis between measles and rubella are remarked by the writer and he described their respective symptoms as observed by him during a recent prevalence of both simultaneously. The principal differences observed were the marked prodromal symptoms of catarrhal disorder, fever, etc., with the early appearance of Koplik's spots in measles as compared with the slight or absent prodromata in rubella, and the later appearing, more lasting, and confluent eruption in measles. The papules in rubella are more discrete and they appear often as the first noticeable symptom. The fever is not so high as in measles and complications are notably absent. In three of the writer's patients he had the opportunity of observing both disorders occurring in the same patient within a few weeks and noting the contrasting symptoms and course. There are doubtless borderline cases, but careful examination will usually lead to a correct differential diagnosis. H. M. McClanahan (Journal of the American Medical Association, December 7, 1907).

MIDDLE TURBINAL, INDICATIONS FOR RESECTION OF THE.

Some years ago the author advocated the resection of the middle turbinated body as essential to the radical treatment of ethmoiditis and nasal polypus. After reviewing some 120 cases, he now sets forth the following indications for the operation: To promote drainage and counter-drainage in nasal accessory sinus suppuration and for access in diagnosis and treatment. To promote cleansing in certain types of atrophic rhinitis (at-

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rophic ethmo-rhinitis). To relieve œdematous turgescence and to provide access for the radical treatment of non-suppurative ethmoiditis and nasal polypus. To suspend pressure leading to headache, neuralgia, eye symptoms, and broadening of the nasal bridge, etc. To improve nasal respiration and ventilation. To relieve hyperæsthesia and to diminish certain reflexes, *e.g.*, sneezing, asthmatic stimuli, etc. W. E. Casselberry (Journal of the American Medical Association, July 6, 1907).

OPSONINS IN NORMAL AND PATHOLOGIC SERA.

Wright's method of estimating the opsonic indices in bacterial infections is hardly accurate enough to compensate for the amount of time involved in its application. There is a general parallelism, however, between the opsonic indices and the clinical course of most cases, so that these determinations should be made when the results of inoculation can not be controlled by the ordinary clinical methods of observation, when there are several organisms present and when the patient does not improve under the usual method of inoculation.

Its variations depend on (*a*) difference in normal sera, so that even with counts averaged from two, three or more, supposedly normal sera, it is not possible to prevent variations of 10 to 30 per cent.; (*b*) differences depending on the course of the leucocytes; and (*c*) differences depending on counting different areas of a slide.

The leucocytes from patients, the subjects of bacterial infection, do not always agree in phagocytic activity with those from supposedly normal individuals. During recovery from some infections their phagocytic activity surpasses the leucocytes of supposedly normal individuals, and during convalescence their phagocytic activity falls to or below that of the normal leucocytes.

The inoculation of dead cultures of homologues or heterologous bacteria is helpful or curative in many local infections. Some cases of septicæmia recover without inoculation, so that we cannot be guarded in attributing the cure of such cases solely or partly to bacterial inoculation. Some general and some local infections are too severe to be helped by such inoculations. Some very chronic and obstinate local infections may be helped by inoculations, but it is probable that their response can be easily exhausted by too large, and perhaps by too frequent doses, and it is very doubtful if such advanced cases can be completely cured by inoculation. N. B. Potter (Journal of the American Medical Association, November 30, 1907).

OTITIS MEDIA, TREATMENT OF.

Great success has been obtained in the treatment of acute and chronic otitis media and other forms of otorrhœa with a concentrated solution of boric acid in alcohol and glycerine. The formula is: Boric acid, one dram; alcohol, two or three drams, and glycerine, up to one ounce. The solution is nonirritant and nontoxic, and can be used for long periods without producing any unpleasant effects. It is prolonged in action, owing to the large amount of boric acid present and also to its solution in glycerine. Its powers of penetration are great, it flows readily, and will readily percolate through even a small perforation. Its penetration is greatly aided by its high specific gravity—about 1200. The treatment is painless, even when the solution is freely instilled into the middle ear. In chronic cases, the ear should be

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first syringed out with a warm aqueous solution of boric acid. The head is then held so the affected ear is uppermost, and the drops, previously warmed, are freely poured in. A. F. B. Richards (Lancet November 30, 1907.)

PAIN, INJECTIONS OF AIR FOR THE RELIEF OF.

Nine cases are reported by the writer in which subcutaneous injections of air were given for the purpose of relieving painful manifestations. The method was introduced by Cordier at a time when elongation of nerves by stretching was in vogue for the treatment of neuralgia, especially in sciatica. The injections are supposed to produce elongation of the finer nerve tendrils where they leave the subcutaneous tissue to enter the derma proper.

The method is simple, a sterilized hollow needle being plunged through the skin over the seat of the pain, and, after making sure that a blood-vessel has not been entered, air is pumped in by means of an ordinary rubber bulb. In the air-tube is placed a glass tube filled with sterilized cotton. A rounded swelling forms round the seat of puncture, and when the air reaches a vascular or nervous sheath, it rapidly spreads along it and secondary swellings form at a distance. These secondary ramifications are specially likely to form on the limbs. The skin at first becomes blanched, but later this gives place to a pronounced redness lasting for several hours. It takes several days for the air to be completely absorbed. No pain is experienced, and cutaneous sensibility is at once diminished, the skin becoming numb. After the needle has been withdrawn and the hole closed with collodion, it is indispensable to massage the part. The subcutaneous air must be alternately dispersed and brought together again, especially over the painful spots. The procedure is applicable to the relief of pain due to all forms of neuralgia and neuritis. But the amount of air must be varied according to the anatomical structure of the part.

In the treatment of sciatica, the injections should be made in the lumbar region, on the outer side of the thigh, and on the supero-external part of the leg. The writer has not yet ventured to try this mode of treatment in neuralgia of the face. In all nine of the cases reported, relief was rapid and lasting. A. S. Gubb (British Medical Journal, November 9, 1907).

PERICARDITIS.

In pericarditis, pain may be due to friction or be of cardiac origin. Cardiac pain is rare, and is met with only with acute cardiac dilatation. Friction is the most characteristic sign, and, when present, is conclusive. Cardiac dullness is always increased. One of the earliest signs is said to be such increase toward the left base. The writer considers this due, not to effusion, but to dilatation of the left auricle. The difficulty of diagnosis, even by the most competent diagnosticians, between pericardial effusion and cardiac dilatation is proved by the experience of paracentesis. Systolic recession of the apex-beat is pathognomic of adherent pericardium when present, but the converse is not true. Effusion muffles the heart-sounds, but they may be equally weak from dilatation only. A perverted pulse-respiration ratio is often as marked in acute pericarditis as in acute pneumonia. True pulsus paradoxus is very rare, except with mediastino-pericarditis; however interesting, it is of no practical use in diagnosis. When effusion is large, there may be bulging or prominence of the epigastric

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region, with pulsation that can be seen and felt, also displacement of the left lobe of the liver.

The writer cannot understand the objection to opium in heart-affections. He has used it largely, and has never seen anything but good follow its judicious administration. Paracentesis is rarely necessary in pericardial effusions of rheumatic origin, which are always serious. When effusion is purulent, further procedures will be necessary, but paracentesis must precede incision, for there is no other way of ascertaining the nature of the effusion. S. West (British Medical Journal, October 26, 1907).

RECTAL FEEDING.

The author holds that rectal feeding amounts at best to a pronounced subnutrition, and that only in exceptional cases, in which the metabolic processes have been gradually reduced to an abnormally low level, is it possible to provide an amount of proteid such as will establish nitrogenous equilibrium and so prevent disintegration of the proteid tissues of the body or of foodstuffs having a total energy value beyond one-quarter of that dissipated by the organism. In the average case, rectal feeding is associated with progressive loss of weight, and at times a subnutrition may proceed to such a degree as to induce a condition of acid intoxication, particularly in the female. It can not be relied on to effect that improved nutrition desired by the surgeon before operation. It is doubtful whether it secures the absolute functional rest required in certain gastric cases, for, according to Winternitz, rectal feeding is associated with a secretion of gastric juice.

The best results, then, according to the writer, are to be obtained from enemata of predigested proteids, of albumoses or peptones, the two latter in 10 per cent. concentration of emulsified fat in the form of milk or yolk of egg, and of glucose, in 10 per cent. concentration, with the addition of sodium chloride to 1 per cent. F. C. Moore (Practitioner, November, 1907.)

SARCOMA, ROENTGEN RAYS IN.

Roentgen ray treatment of sarcoma has in the past been confined to inoperable and rapidly recurrent sarcomata. In other words, it has been practically confined to the treatment of hopeless cases, and therefore the results obtained are marvelous. It can be recommended in all inoperable cases, but the more extensive the disease, the less likely is a complete recovery obtained. In operable cases, the rays should be used before and after operation. In each case, there should be a consultation between the surgeon and the Roentgenologist.

The freedom from recurrence is surely greater than that obtained from any other form of treatment in the same class of hopeless cases. Some of these cases have remained well from three to four years after cessation of treatment. Much depends upon careful technique and skillful application of the rays. G. E. Pfahler (New York Medical Journal, December 21, 1907).

TONSILLAR INFECTION, REMOTE EFFECTS OF.

There is a growing clinical and experimental evidence that the tonsils are the portals of entry for the infectious material in a wide range of diseases, among which are pericarditis, myocarditis, endocarditis, arthritis, chorea, neuritis, adenitis, glandular fever, nephritis, pleurisy, tuberculosis, iritis, phlebitis,

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osteomyelitis, various other streptococcus septicæmiæ, Hodgkin's disease, and possibly even certain forms of leukæmia.

The tonsillar absorption and injection experiments of Goodale, Kayser, Mendelsohn, Piera, Lexer, Grober, and others are mentioned by the author and seem to admit of the following conclusions: Minute particles of foreign matter, dust, carmine, and other pigment, when locally applied, are rapidly absorbed by the tonsils from the crypts and are found easily in sections of the tonsils as early as 15 minutes afterward.

Bacteria do not pass so rapidly and are rarely recoverable in the tissues under ordinary circumstances. Ordinary organisms are probably absorbed less rapidly, partly on account of their mucous protection. They are promptly destroyed as soon as they enter the tonsillar parenchyma, unless able to resist this power on the tonsil. It is probable even in this case that their virulence is somewhat altered. Virulent organisms follow the same course that dust particles and non-pathogenic or mildly pathogenic bacteria do and may cause local lesions, lymphatic involvement and lesions in any part of the body. Tubercle bacilli may lodge and remain indefinitely in the crypts, ready to be absorbed at any time. They are a constant source of danger, even though not involving the tonsil in actual disease. P. K. Brown (Journal of the American Medical Association, June 15, 1907).

TUBERCULOUS LYMPH NODES.

The various portals of infection in tuberculosis of the cervical lymph nodes are enumerated by the author as follows: (1) The faucial tonsils; (2) the pharyngeal tonsils or adenoids; (3) a tuberculosis of the temporal bone, with resultant otitis media; (4) carious teeth; (5) tuberculous lesions of the buccal and nasal mucous membranes. The writer does not agree with the general opinion, that tuberculous enlargement of the lymph nodes occurs in chronic forms only, but considers it unquestionable that there are cases which run a very acute course, so that caseation occurs within two or three weeks after the onset of the disease. He also notes the condition, termed by Fischer the pseudoleukæmic form of tuberculous lymph nodes, which consists of enlargement not only of the cervical, but also of the axillary and inguinal glands. The clinical picture resembles that of Hodgkin's disease, but the condition is not progressive, does not reach the enormous size of the latter, and does not involve the mediastinal nodes.

In regard to prophylaxis and therapy, the masses should be educated in the general principles of hygiene. Since the tonsils and adenoids are the most frequent atria of infection, early and radical removal is indicated. When operation is inadvisable, mountain or seashore climate, with codliver-oil, guaiacol, and iodide of iron, is indicated. The writer does not believe that iodine externally is of any value whatever. If the nodes are thoroughly extirpated, there is no recurrence in 75 per cent., and ultimate recovery in 90 per cent., both of which figures are improved by the systematic removal of the tonsils and adenoids at the same time as the lymph nodes. D. N. Eisendrath (American Journal of Surgery, September, 1907).

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TRAINING OF STUDENTS IN MEDICAL ORGANIZATION.

The students of the University of Pennsylvania Medical School have formed an organization, the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is very closely modeled. The various student societies take the place of the State organizations and elect members to a House of Delegates which transacts all the business of the association. An annual meeting is held at which papers are read by chosen members, thus encouraging original research and a scientific spirit. The organization is named The Undergraduate Medical Association of the University of Pennsylvania and already has over two hundred and fifty members.

INFORMATION DESIRED CONCERNING CANCER

Dr. Horace Packard, 470 Commonwealth Ave., Boston, Mass., desires information regarding any alleged recoveries or cures of inoperable or recurrent carcinoma of the mammary gland. If any case or cases are known to any one who reads this circular and can be authenticated by facts as to the history and condition prior to recovery and the length of time which has elapsed since recovery, such information will be much appreciated and duly acknowledged. Any well-authenticated reports of recoveries from carcinoma located in other parts than the mammary gland will be welcomed.

Cancer paste cures, X-ray cures, radium cures, or cures as result of surgical operation are not wanted. Hearsay cases are not wanted unless accompanied by name and address of person who may give knowledge first hand.

Book Reviews

A Treatise on Diseases of the Skin. For the use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Fifth Edition, Revised. Handsome Octavo of 1150 Pages, with 267 Text-illustrations, and 34 Full-page Colored and Half-tone Plates. Cloth, $6.00 net; Half-Morocco, $7.50 net. W. B. Saunders Company, Philadelphia and London. 1907.

Few students of medicine realize till late the importance of a thorough familiarity with skin diseases in the diagnosis of other troubles, so many of the signs of general diseases being associated with skin changes. The book before us is admirably fitted in succinctness and range of discussion to meet the needs of the many doctors who see the necessity of acquiring more complete knowledge of dermatology. While perhaps too full for undergraduate students, it will be a friend in many times of need to "advanced students and practitioners," for whom the writer intended it.

The preliminary treatises on anatomy, physiology, symptomatology, pathology, and diagnosis are good. The section on "A conspicuous character or feature (of a disease) as a diagnostic factor" is worth careful study. The apology for the use of the classification of Hebra (modified) is interesting in view of the departure from that classification by Duhring and others. Yet for advanced students and practitioners the author's choice is a wise one.

The addition of a number of tropical diseases will be of especial help to practitioners going to China, India, and our own tropical districts.

Great judgment has been used in the selection of illustrations, both original and from other observers. In many cases the illumination preparatory to photographing has brought

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out the form of lesion like a relief map. Eight of the 34 full-page plates are devoted to syphilis, to which subject about one-thirteenth of the descriptive matter of the book is given. In some cases merely "classical" remedies might with advantage have been omitted. Strength of solutions in this as in many books would better have been stated in percentage rather than as grains to the ounce. In appearance the book is well executed. It tempts one to pick it up and read.—A. H. W.

CONFERENCES ON THE MORAL PHILOSOPHY OF MEDICINE. Prepared by An American Physician. Rebman Company, 1123 Broadway, New York. Rebman, Limited, 129 Shaftsbury Ave., W. C., London.

Probably at no time during a medical man's career is there a greater necessity for sound advice and proper guidance than at the time he begins his medical studies. Flushed with the desire and ambition to become a great doctor, the young candidate does not always stop to counsel with the older and successful men in the profession which he has chosen, but plunges boldly into the arena with total ignorance of the obstacles he is likely to encounter, and with very little or no knowledge of the obligations that will be expected of him.

The volume before us for review should be recommended to and read by every man who contemplates studying medicine. Even those who are now in practice would be amply repaid for the time spent in reading this book. It is written in the form of conferences, and deals with the moral philosophy of medicine. It contains much sound advice to the young physician. While it may contain considerable in the way of ancient history of medicine which will not appeal to some, the line of reasoning and the work accomplished by the early teachers cannot help but act as a stimulus to the conscientious physician, encourage him to greater activity, and instill in him a greater admiration for the noble profession he represents.

The author is strong in his denunciation of the man who thinks of studying medicine with a mercenary motive in view, and at this point we cannot do better than quote a few lines. "Those persons who may wish to enter the ranks of the profession with expectations of great pecuniary gains, need not waste a single minute to the further consideration of the question, but go elsewhere for the worship of mammon, lest they make the noble profession of medicine the vilest of trades."

A little further on the young physician finds an outline of his obligations to his profession, to his patients, and to the public. He is also given an idea of the attitude he should assume, in the following words, "Only in the faithful service of God, country, mankind, letters, science and art, wilt thou find true happiness."

Appended to this very interesting and valuable book, to which we deeply regret the author did not think wise to prefix his name, are the Hippocratic Oath and Law, the National System of Medical Morals, the abstract of the National System, an analysis of Dr. Austin Flint's Commentaries on the National System of Medical Morals, and some explanatory notes. —R. B. S.

DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY. By Robert H. Greene, M.D., Professor of Genito-Urinary Surgery at the Fordham University, New York; and Harlow Brooks, M.D., Assistant Professor of Pathology, University and Bellevue Hospital Medical School. Octavo of 536 pages, profusely illustrated. Cloth, $5.00 net; Half-Morocco, $6.00 net. W. B. Saunders Company, Philadelphia and London. 1907.

To fully realize the advantage of a thorough knowledge of the diseases of the genito-urinary tract, it is only necessary for a man to be in general practice but a short time. Early in his career the young physician is very apt to be called upon to treat cases of specific urethritis, or to relieve retention of urine which is the result of a cruel stricture, or he may be called in to administer to a patient suffering with uræmic convulsions, pending the arrival of the regular attendant. The clever management of any one of these cases may mean the starting point of an early practice and a most successful career.

The authors have undoubtedly realized from experience the disadvantages of the numerous cumbersome text-books on this important subject, and have attempted to present to the pro-

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fession a work in which are considered only the more important diseases, taken from the standpoint of the practitioner and surgeon. Under the circumstances the book is necessarily incomplete, but the authors admit this fact and call attention to the impossibility of treating the subject exhaustively in a volume of this size. The references are limited, but numerous valuable works are referred to. The majority of the illustrations are not as good as one usually finds in text-books, nevertheless, they serve well for demonstrative purposes.

The greater bulk of the subject matter is devoted to the consideration of the urinary organs proper. The purely sexual disorders have been discussed to a relatively less degree.

Throughout the text there seems to be a little too much tendency to generalization, and especially is this noted in the parts treating of the clinical examinations, where the description of the technic is often lacking in the necessary detail. For instance, under the heading of the examination of the urethral exudate, we read that specimens of gonococci stained by the methylene-blue method give satisfactory results for the identification of this organism, but whenever any doubt exists, or the disease must be viewed from the medico-legal standpoint, the specimens must be stained by Gram's method. We are here told what to do, but not how to do it. The chapter on Ocular Manifestations of Renal Diseases has been written by Richard Kalish, A.M., M.D.

The authors seem to have fulfilled the promises of the title pages, and the work should commend itself to many.—R. B. S.

HINTS ON THE MANAGEMENT OF THE COMMONER INFECTIONS. By R. W. Marsden, M.D., M.R.C.P., D.P.H., Honorary Physician to the Ancoats Hospital, Manchester; Honorary Assistant-physician to the Manchester Hospital for Consumption; Formerly Medical Superintendent, Monsall Fever Hospital; and Clinical Lecturer in Infectious Diseases, Owens College. E. B. Treat & Company, New York. 1907.

In the preparation of this small book, the author has considered only those commoner infectious diseases which are endemic in his own country. The general management of fever is first considered, and then the different specific infections are taken up in turn. The diseases in which the physician is concerned merely with the diagnosis are but briefly outlined. Isolation and disinfection, important topics in a book of this sort, are briefly discussed, each under a separate appendix. While this book is far from being complete, it will undoubtedly be found of service in association with standard works.—R. B. S.

THE PHYSICAL EXAMINATION OF INFANTS AND YOUNG CHILDREN. By Theron Wendell Kilmer, M.D., Adjunct Attending Pediatrist to the Sydenham Hospital; Instructor in Pediatrics in the New York Polyclinic Medical School and Hospital, New York; Attending Physician to the Summer Home of St. Giles, Garden City, New York. Illustrated with 59 half-tone engravings. F. A. Davis Company, Philadelphia. 1906.

This small volume of 84 pages is prepared solely as a guide to the student and physician, and deals entirely with the physical examination of infants and young children.

Anything prepared to facilitate the thorough examination of these young subjects should be commended, for under the best of circumstances, a satisfactory examination is sometimes a difficult task.

The text is profusely illustrated, which fact should add much to the value of the work to those for whom it is intended.—R. B. S.

Books and Monographs Received

The editor begs to acknowledge, with thanks, the receipt of the following books and monographs:—

From the Oxford University Press, New York: "Diseases of the Larynx." By Harold Barwell. 1907.——"Treatment of Disease in Children." By G. A. Sutherland. 1907.——"Surgical Emergencies." By Percy Sargent. 1907.——"Skin Affections in Childhood. By

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H. G. Adamson. 1907.——"Heart Disease. By F. J. Poynton. 1907.——"Practical Anæsthetics." By H. E. G. Boyle. 1907.——"Diseases of the Male Generative Organs." By E. M. Corner. 1907.——"Diseases of the Ear." By Hunter Tod. 1907.——"Diseases of the Nose and Throat." By E. B. Waggett. 1907.——"Auscultation and Percussion." By S. J. Gee. 1907.——"Functional Nervous Disorders in Childhood." By L. G. Guthrie. 1907. ——"Operations of General Practice." By E. M. Corner and H. I. Pincher. 1907.—— "Cancer of the Womb." By F. J. McCann. 1907.——Wallace's "Enlargement of the Prostate." 1907.——Abel's "Handbook of Bacteriology." 1907.——"Tetany Parathyreopriva." By Eugene H. Pool, New York. 1907.——"Gonorrhœal Prostatitis." By J. Bayard Clark, New York City. 1907.——"Trachoma: Its Character and Effects." By Passed Assistant Surgeon T. Clark and Passed Assistant Surgeon J. W. Schereschewsky. Public Health and Marine-Hospital Service, Washington, D. C. 1907.

From the United States Department of Agriculture, Washington, D. C.: "Report of the Secretary of Agriculture." 1907.——"General Results of the Investigations Showing the Effect of Sulphurous Acid and Sulphites Upon Digestion and Health." 1907.——"A Successful Alabama Diversification Farm." By M. A. Crosby, F. J. Duggar, and W. J. Spillman. 1907.——"The Preservative Treatment of Fence Posts." By Howard F. Weiss. 1907.—— Consumption of Cross-Ties in 1906."——"The Drain Upon the Forests." By R. S. Kellogg. ——"Consumption of Tanbark and Tanning Extract in 1906."—"Sand-Clay and Burnt-Clay Roads." By W. L. Spoon. 1907.——"Consumption of Pulpwood in 1906."——"Forest Tables: Lodgepole Pine." By E. A. Ziegler.——"Production of Slack Cooperage Stock in 1906."——"Harvesting and Storing Corn." By C. P. Hartley. 1907.

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Sajous's Analytical Cyclopædia of Practical Medicine.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

THE SUBSEQUENT HISTORY OF A CASE OF ACQUIRED CATARACT IN CHILDHOOD.[1]

BY HOWARD F. HANSELL, M.D.
Professor of Ophthalmology in Jefferson Medical College, Philadelphia.

THE history of this case will be found in the transactions of the American Ophthalmological Society, 1907. A brief recapitulation of the principal points of clinical interest is necessary in this paper to make the record of the two eyes complete. In an apparently healthy boy, 3 years old, without assignable cause, the left crystalline lens became opaque in the course of a few months. In October, 1906, the entire lens was milky white and no striæ could be detected nor any line of demarkation seen between the nucleus and cortex. Light projection was good in all parts of the field. Three discissions were made, and finally the opaque and thickened capsule, with some adherent lens matter, was extracted. For several days following the last operation there was a small hernia of the vitreous. In a week this had disappeared, and, with +10d., vision was good. Accurate measurement of the refraction and estimation of vision was impracticable on account of the patient's youth. The pupil was black and clear, and a distinct view of the normal fundus could be obtained. The patient was dismissed to return at such time as the cataract in the right eye had advanced sufficiently for operation. Three weeks later the boy complained of partial loss of vision in the operated eye. The anterior layers of the vitreous had become infiltrated, the vitreous had lost its transparency, and probably the retina was

[1] Read before the Section on Ophthalmology, College of Physicians, January 16, 1908.

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detached. This unexpected condition could be referred to two possible causes. Either degeneration of the anterior portion of the vitreous had resulted from the operations and the hernia, or the infiltration and detachment of the retina had followed a blow upon the eye received the day before the dullness of vision was noticed. I am inclined to believe the former was responsible.

In the right lens, at the time of the first examination, a few irregularly-curved lines of opacity could be plainly seen by the ophthalmoscope. The opaque striæ were directed principally toward the center of the lens and were crossed by others at right angles, indicating involvement of several layers, probably posterior to the vertical meridian. During the next six months the opacities increased in size, density and in number, the progress of cataract development resembling very closely that often observed in the extension of senile cataract. Before the opacity of the lens excluded a view of the fundus, I asked Dr. de Schweinitz to give the patient the benefit of his opinion. Careful examination by him disclosed the presence of a central choroiditis, limited to a small area around the posterior pole. Under the use of mercurial inunctions it is probable that the choroiditis was cured, although the lens became more and more opaque until vision was reduced to the perception of light. The capsule was also opaque in this as in the other eye. The manner of the extension of the opacity in the capsule was unusual. Transparency was lost first in the upper and inner section, and gradually extended downward and outward. The boundary between the opaque and clear portions of the membrane was abrupt and clear-cut, and the two sections of the capsule presented a striking contrast to each other. The growth of the lenticular opacity kept pace with that of the capsular, suggesting an etiologic connection, the reverse of that ordinarily met with in senile cataract. I believe the choroiditis was the primary cause of the capsular disease, and that the lens was deprived of its proper nutrition through destruction of the epithelial layer of the anterior capsule, and became involved secondarily.

A second interesting feature in the history of the right eye is the method of operation adopted for the removal of the lens. Again Dr. de Schweinitz came to my aid and approved the plan proposed, namely, the removal of the anterior capsule as the first step, and linear extraction of the lens as the second step of the operation. This operation was performed on October 18, 1907, and was successful. Recovery was rapid and uneventful, and at the last examination the boy had excellent vision with cataract lenses. No trace of opacity remains in the pupil, the vitreous is clear and the fundus is healthy.

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FURTHER OBSERVATIONS ON THE VALUE OF LACTIC ACID AS A REMEDY FOR CERTAIN CONDITIONS OF THE NASAL PASSAGES.

By ALEXANDER W. MacCOY, M.D.
Surgeon of the Throat and Nose Out-patient Department, Pennsylvania Hospital, Philadelphia.

The previous paper, "Observations on the Value of Lactic Acid as a Remedy for Certain Conditions of the Upper Respiratory Tract," appeared in the transactions of the American Laryngological Association of 1898. Since 1898 I have used lactic acid in the treatment of diseases of the nasal passages continuously and with benefit. I incorporate part of my former article as substantiated by subsequent experience.

In advocating the use of lactic acid in the nasal chambers for obstructive conditions dependent upon engorgement or hypertrophy, I call attention to the fact that the procedure is simple, quickly performed, and free from danger or much pain. Lactic acid, being fluid, is more available than acids of crystalline form. A small thread or thin tuft of cotton is applied to the small, roughened probe, and then saturated with the strong acid, and, after complete cocainization of the parts, is applied to that portion of the nasal chambers requiring it. Without previous cocainization the application of lactic acid is sharp, but the pain caused is of short duration. With careful, complete cocainization the application is painless.

To enumerate all the various conditions to which this acid is applicable is quite unnecessary, but I will mention a few of the most important.

Its employment is indicated in conditions found in chronic rhinitis, chiefly hypertrophic, though often in certain atrophic conditions and in purulent chronic rhinitis of childhood. In the catarrhal conditions in children not amenable to milder measures it often offers advantages over other remedies in its milder reaction, freedom from deep wounds of tissue, and rapid restoration of epithelial membrane. In adults, after the removal of polypi, applications of lactic acid to tissue from which they have been removed is much more advantageous than any other means of which I have knowledge. Recurrent suppuration of the anterior ethmoidal cells, with accompanying headaches, etc., atrophic changes in the vault of the pharynx in adults—often difficult to cure—respond happily to the use of lactic acid. The nasopharyngeal vault is often the seat of catarrhal discharges, sometimes associated with lymphoid tissue in young adults. This may not be at all obstructive to nasal respiration or interfere with vocal resonance, but the secretion is annoying and excessive. Under these conditions lactic acid will be found effective; also in obstructions of the Eustachian tube, as an effect of

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naso-rhinal inflammation, the congestion and hyperplasia of the tube can, in some instances, be removed. Lymphoid tissue in young adults in the fossa of Rosenmüller can be mummified or absorbed by repeated application of lactic acid. This is of value in cases not available for surgical procedure.

To make a summary of my personal clinical observation: The employment of lactic acid offers advantages over other acids now used, in that it is less severe in action and reaction, but none the less efficient; that it is superior to other acids by reason of its power to change cell acids and quicken changes in the mucous membrane, effecting absorption of cell tissue in a remarkable manner; that it does not produce cellular irritation in contiguous tissue when locally applied, and is therefore of greater value than any other active chemical agent now employed; and that, while lactic acid has a cauterant action on mucous tissue, it also has, in addition, special selection for cell tissue, making its effects apparent by absorption of hyperplasia.

216 South Fifteenth Street.

WANTED—A MEDICAL BUREAU OF PUBLICITY, ESPECIALLY FOR COUNTY MEDICAL SOCIETIES.[1]

By J. MADISON TAYLOR, A.B., M.D.
PHILADELPHIA.

In America we admire and encourage a frank setting forth of all facts. The people have plenty of common sense and are fully alive to the necessity of being made aware of underground forces working for evil.

The profession of medicine is essentially an educational agency. It is still held by its nobler traditions to a dignified position of reticence. It is governed by ethical principles somewhat restricted and vague. Nevertheless, the question should be fairly met: Do these ethical limitations accomplish the objects for which they were originally devised? By not one jot or tittle would I assail the spirit in which they were conceived, or mar one little bit the purity of those principles of right conduct, of that conscientious protection of the home or of mutual relationships which exists between advisers and family. There is, however, ground for fear than in *the wider field of relationships between the profession and the great world-movements* gross misapprehensions have arisen which have long been a source of injustice, not alone to us but to those who need our counsel, and much harm has consequently resulted.

[1] Read before the Philadelphia County Medical Society, January 22, 1908.

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The central aim of the profession of medicine is radically different from all other professions and callings, and only a few individuals fail to adhere to it conscientiously. We stand as a unit sworn to use all the powers we possess or can acquire to prevent the conditions which make our calling necessary. A secondary purpose is to cure disease. In short, whereas *all business men endeavor to increase demand* for their services, *we strive to prevent demand* for ours. So much for the basis of our professional ideals, to which, with rare exceptions, all its exponents adhere.

Not so, however, with that immense force of commercial auxiliaries grown up alongside, viz.: the purveyors of articles which we use in our work, drugs, remedial agents, waters, various appliances, and lately special foods, *et id omne genus*. The watchword of these men is not only to supply all demands, but to apply progressive business principles to their enterprises and *keep the demand not only active but over-active; to create demand,* legitimate or artificial. They assume to teach us and also form opinions for the public. Here is a grave peril for which we are partly responsible by omitting to insist upon needful precautions. The outcome of this carelessness has now produced complex problems with which we are compelled to deal; we cannot dodge the responsibility.

In proportion as we do solve these problems well or ill, so will the public estimate our value to the community, the dignity and force of our position as advisers in matters of health. Ours is the duty to encourage all those enterprises of genuine utility, such as highly specialized pharmaceutics, practical advances in physiologic chemistry, in hygiene and legitimate allied branches as they may develop. We must teach the public the dangers of undirected drug-using; the gravity of misapprehending the over-statements of advertisements and news items insidiously promulgated.

It is difficult to compete with shrewd merchants in differentiating between facts based on truth and those which are adroitly cited to sustain fictitious demands or to encourage excesses of supply. Above all we should aid in promulgating right conceptions of the advances in medical science.

The immediate question we must face is: how can we best conduct this laborious campaign? We have pitted against our best efforts two tremendous forces. First, the inertia developed by years of lax habit formation, both among ourselves and the public—years wherein even the best of our profession cherished the belief that a dignified silence is the best way to assert themselves, and second, the overmastering power of organized capital, grown, by our passive encouragement, into a stupendous force. It is doubtful if the entire momentum of the profession, even if it could be aroused to the acme

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of vigor, is competent to oppose the forces thus arrayed, or to be arrayed, against us. War is to be deplored except where inevitable. There is so much that can be said in favor of the manufacturing chemists that their dicta would in all probability appear quite as convincing as our own, if we limit our efforts to merely denying the error of what is said.

We can and should make clear to the public the unqualified harmfulness of all nostrums. In our dealings with the reputable pharmaceutical houses, we can depend upon their fairness and reasonableness. Especially should we make alliance with them, defensive and offensive, against the perniciousness of the nostrum makers. We should make the people aware of the splendid advances in medical science, whose purpose is to check, prevent, and cure disease.

The agency we must utilize is the public press. Here, upon this recognized arena, with the great body of thinking people as audience, must we stand to win or lose on truth as our inspiration, on ethical principles as rules of the competition, on our sincerity of purpose to benefit our fellow man as the banner of our cause.

In my opinion it is necessary to meet modern conditions by adopting modern methods. Every form and kind of opponent to the purposes and efforts of the profession make use of the newspapers to reach the attention of the people. The whole crew of fakers, grafters, panderers to evil amusements, venders of disguised poisons, and all the disseminators of hurtful influences, employ vast sums of money through press agents of one kind or another. Conscientious editors deplore these facts, but assert their inability to differentiate. Newspapers claim they are ever alert and anxious to keep their columns free from stuff inspired by quackery. The existing conditions are obvious by glancing at the daily papers or even the magazines.

The one available means of combating these destructive agencies is for organized medical bodies to establish bureaus of publicity, safeguarded by competent committees, through which suitable information, opinions, acts or happenings shall be accurately and systematically supplied to the papers. The public are made fully aware of every tempting method of doing themselves harm. We, as a profession, fail to adequately exert those counter influences which it is our duty to impress upon the consciousness of those who need our protection. Some money may be required to accomplish this, but chiefly co-operation, judgment, candor, and accuracy of statement.

Take a familiar example of the prostitution of communal interests. The advocates of anti-vaccination, many of whom are sincere, having many grounds for the beliefs they cherish, because existing methods do demand improve-

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ments, yet they assail the integrity of the only known and proven method we have to protect the community from slaughter and disablement by what they rightly call a "loathsome disease." I, myself, have so often appeared at Harrisburg to oppose these worthy gentlemen, that I know something personally of the character, extent, and earnestness of their efforts. They nearly won last year; their bill passed, but was vetoed by the Governor. I am informed that now, through the generosity of one very rich man, vast sums are being constantly expended through excellent press agents, aided by lawyers and others who make it a business, so that every town and hamlet is flooded with misleading statements, through cleverly selected avenues, agricultural papers, granges, Sunday-schools, etc. Hence, when a bill comes up again for consideration the force exerted upon legislators will be overwhelming. Dr. Samuel G. Dixon does all one man can do to urge upon the public the real facts. His voice is scarcely heard, often not at all by those who ought to be made aware of the real facts and who carry the balance of power in their hands. Why? Because he, and those who think and believe with him, are not provided with suitable means and avenues of disseminating correct views. We thus face a catastrophe. The remedy is to meet fire with fire—oppose wrong views with right and to a corresponding extent—now it is all one-sided.

If Dr. Adolph Lorenz, of Vienna, when he came to this country, had been provided with a competent press agent, his visit would have been a well-merited triumphal progress, his reputation enhanced, and himself comfortable. Instead his movements were made to appear almost ludicrous; he was subjected to endless embarrassments, his words distorted. The whole episode reflected anything but credit on those who sincerely tried to do him honor. The fact that he is equipped with a splendid manhood, a noble dignity, excellent good humor, saved the occasion from bathos at least. The efforts of the excellent gentlemen who assumed to pilot him, to "protect" him, were ill advised. They labored under the delusion, too prevalent among medical men, that reporters are more or less of a nuisance, hence they strove vainly to hedge him about with safeguards. The frank, systematic co-operation of an experienced newspaper man would have placed his doings and sayings correctly before the public to the satisfaction of all.

If a prominent citizen suffers from some sudden injury, illness, mental collapse, the physicians in charge endeavor to protect the individual and the family. A solemn mystery is too often made of simplest things; hence they are misconstrued, exaggerated, woefully misrepresented, and conditions both immediate and remote are rendered vastly worse than the facts warrant. My experiences in 1891-2, when James G. Blaine was so prominent a figure among

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the presidential candidates, taught me some practical lessons. The narration of my experiences would fill a book full of pathetic and absurd incidents. I was forbidden by the family to tell a single thing. Reporters of the keenest type assaulted me in every guise. That I succeeded in avoiding journalistic evisceration always afforded me great satisfaction.

We have recently heard of a free Educational Tuberculosis Exhibit. To this came a certain number of visitors, by no means large (about 5000), nor those who especially needed the education, nor for whom it was especially intended. About the same time the tobacco manufacturers held an exhibit for which an entrance fee was charged. It offered no educational nor beneficent features, and yet the attendance was stated to be 70,000.

I would propose the establishment of Medical Bureaus of Publicity in connection with all County Medical Societies. A reliable press agent should be retained. Many and varied reasons can be adduced why these are absolutely essential to secure a correct presentation of facts bearing upon the integrity of medical science and the best interests served by the conservators of public and private health.

All those interests which are diametrically opposed to medical ethics do employ press agents. With them it is a question of business. Good business methods demand that the public shall be made acutely aware of the more attractive phases of the proposition offered. These fakers have goods to sell, advice, or whatever they wish to barter for money. The chief avenue of diffusion of knowledge is the daily press, through the ordinary channels of advertisement or shrewdly placed news items. For example, as is well known, the great nostrum venders expend many millions of dollars annually, and through the intelligent co-operation of professional press agents. These constitute practical Bureaus of Publicity for Quackery. I am informed that the World's Dispensary of Buffalo, spends thus $1,500,000; Peruna, $1,000,000; Hostetters's Bitters, $1,000,000, annually, etc. These facts have been courageously and persistently presented by Mr. Edward W. Bok and others.

No organized medical body in the world spends one cent for popular education to "put people wise" on questions it is their desire and duty to have correctly understood. Yet a large and increasing group of irregulars do spend vast sums to mislead the unwary, thereby causing incalculable damage to morality and health.

Why should regular press agents, often thoroughly conscientious men, be compelled to use their brains to advance the interests of fakers and grafters and not for respectable interests? Why are they forced to do destructive work, and not called upon at least to balance this by doing something con-

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structive, salutary, legitimate? Why should they contribute to tearing down existing defenses against enemies to the race and not to strengthening of defenses? Yet such a condition exists to-day in America, and more or less in all civilized lands. They are ready, able, and willing to do right, but they must make their living by business offered.

Among the answers to these queries is the fact that to get money to spend in civic betterments, "there must be something in it" for somebody.

Where could benefactors, wealthy people willing to help mankind, place their money so wisely as by providing means to educate the great mass of the people in right conduct, in knowing the true from the false, in conserving public and private health?

Teaching mankind systematically and accurately how to know good from evil, right interpretations of current facts, advancements in scientific knowledge of hygiene, correct living and acting, should be the unflinching purpose of the profession of medicine.

There is needed courage, candor, unity of purpose in right doing, and a certain amount of money. Without the money to spend this missionary work cannot be effectively pursued.

The first step is to get the real facts known, to teach the people correctly what the profession is doing for their welfare, to furnish information of a kind calculated to advance the best interests of the race. It will cost something, but it must be done. Whatever opposition is offered will be overcome so soon as the sincerity of our purpose and the utility of the plan are made known.

The form and character of such Bureaus of Publicity should be carefully formulated. Rules to govern methods, however, should be revised promptly and repeatedly, until by intelligent evolution, consonant with experience, they shall become perfected. Some societies dominated by ultra-conservatives are likely to adopt rules which may defeat the best objects and will demand liberalization. Others may err by too great laxity, but, on the whole, no serious mistakes need be feared.

Already some attempts have been made in the right direction. The *Pennsylvania Medical Journal* (of December, 1907) offers some wise recommendations.

The Warren County Medical Society, in October, authorized its officers to act as a press committee to edit a column in the local paper.

In Bucks County the president of the County Medical Society, Dr. J. B. Carroll, in his retiring address, urged his colleagues to influence the press. He recognizes that a "large number of leading papers and journals have

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banished these fakers from their columns," yet he calls attention to the deplorable fact that "many so-called religious journals are the strongest allies of patent nostrums and pernicious appliances."

The movement would accomplish most good by becoming universal, broad in scope, systematic, and fairly liberal.

Discussion.

Dr. Henry Beates, in opening the discussion, said: No subject engaging the attention of the medical profession to-day equals in importance, and so vitally affects the interests of the profession, as the education of the public upon certain phases of medical knowledge. This bears directly upon the duty which confronts the profession, when legislative effort is made to establish conditions for securing to the public competent and skilled practitioners. I should like to impress each one present with these incontrovertible facts. Opposition to the efforts of the profession of medicine to establish proper medical education has invariably come from the commercial element involved in the medical colleges. Those professors who persistently exhibit this obstruction deceive the public when they contend that the medical profession is endeavoring to establish a monopoly, and to crush out of existence all varieties of sectarian offshoots and the charlatans, and quacks. It is because of the ignorance of the public that such false and misleading accusations are believed, it is "professional" co-operation in efforts to defeat progress. Of the 256 legislators of this Commonwealth—which includes, of course, the Senate and Legislature—I can say to you that all but eleven have been deluded by this commercial misrepresentation. This emphasizes the importance of establishing a bureau, properly appointed and well supervised, to present to the public through the lay press those *vital principles* of medicine which they should know.

When I use the term "physician," reference is had to that type of high professional character, the product of former times—the men who, without hope of remuneration or reward, are ever ready to rush upon the scene of disaster and accident and contribute freely their skill and services to afflicted humanity. Those are the men who incur risks to life and health for suffering fellow-beings, and who show a disinterested interest in the highest improvements and successes of medical science and its art. These are they to whom appeal is made to contribute what each individually can, to secure conditions that will enlighten the public, so that, in the honest endeavor to better humanity, we will secure public co-operation instead of antagonism.

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You do not perhaps know that the Commissioner of Health, Dr. S. G. Dixon, of this Commonwealth, when enforcing the school law which prevents children from attending who have not been vaccinated, because of the ignorance of the public of the great benefits the law would secure to them, and who were so inflamed by a certain legislative aspirant for re-election to office in his efforts to secure votes, was actually followed to the State Capitol by two ruffians, whose purpose was known to assassinate this public officer; and if it had not been that he accidentally left the building by a door which it was unusual for him to use, he would have been the victim of the ignorant rage of an unenlightened public sentiment, and murdered. Had the educational influence of a press bureau of a County Medical Society enlightened that community, Dr. Dixon would have had the co-operation of every man in the region, instead of dangerous antagonism. Whatever is done or can be done, to minimize the prevalence and destructive effects of infectious and contagious diseases, should be made clearly and fully known to the people. And further, the public should be fully informed of any effort to throttle or limit preventive or curative measures.

Dr. John G. Clark, Chairman of the Board of Public Education of the American Medical Association, spoke of the plans being formulated by the Board in the matter of educating the public upon medical matters. Educators and editors generally had taken the most enthusiastic view of the question. A large number of subjects, he said, really required public exploitation, and that efforts were being made to have the large magazines, agricultural and other papers publish articles bearing upon such subjects. It was the aim of the Board, in connection with the *Journal of the American Medical Association,* that all the articles published for lay people should be bound together or published in pamphlet form. In the event of an outbreak of typhoid fever, if necessary, a certain district might be flooded with literature drawing attention to the necessity of disinfection of water and bearing upon general principles, but not upon treatment. For advice as to treatment, any person would be referred to his family physician. It was the object of the Board to take up the broader phases of medicine; possibly the history of medicine would be considered. All articles would be unsigned.

Dr. A. B. Hirsh felt that the proposition of Dr. Taylor, to have the Philadelphia County Medical Society name a Committee on Publicity, should take

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practical form, and referred to similar work done by one of the other county medical societies of the State.

DR. JAY F. SCHAMBERG believed that medical bodies should have publicity or press bureaus, and that the work can be done in such a manner as to prevent any abuse; that it would result in a vast amount of good to the public. He gave credit to Dr. Taylor for his courage in braving the attitude of the medical profession by the publication, over his name, of articles in the public press which he thought were for the public welfare. It seems to Dr. Schamberg feasible to have a bureau of publicity composed of prominent men in the Society, who could censor reports given out to the press for publication.

DR. CHARLES A. E. CODMAN endorsed the paper of Dr. Taylor, but thought that since such work was to be done by the American Medical Association, it seemed unnecessary that each county society in Pennsylvania should have such a committee or bureau working independently. He would favor a plan whereby the State Society should have the general control of all the subsidiary bureaus in the State, with the Committee of the State Society working in connection with that of the American Medical Association. He believes there should be such a bureau of publicity, but that the profession should work together, thereby making felt its power.

DR. TAYLOR said, in conclusion, that he was particularly gratified at the spirit in which his suggestions were received, rather expecting some opposition. He was well aware of the work being done by the Committee on Education of the American Medical Association, of which Dr. Clark was a member, and with whom he had conferred. The purposes of this committee, as announced, were to educate the profession through dissemination of information in popular forms, and mainly through the medical journals; also to educate the public in the same way and also in the ordinary channels, as magazines, etc.

His own purpose was to more directly provide the county societies with systematized avenues of disseminating correct knowledge or current happenings, as well as of medical polity. This object is more urgent, the results in keeping with the true aims of preventive or public medicine, and would tend to emphasize the co-operation of the county societies which are component bodies of the State societies, hence of the National Society. Then the committee, of which Dr. Clarke is one, would be placed in possession of accumulations of facts and opinions from these regular sources.

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The Therapeutics of Diseases Which Involve the Internal Secretions

MEASLES:—ITS PATHOGENESIS AND TREATMENT.

BY CHARLES E. DE M. SAJOUS, M.D.

PHILADELPHIA.

THE mortality from this disease is far greater than is generally supposed. In the State of Pennsylvania alone during 1906, 1463 deaths were due to it, 1240 being of children under five years of age. On the whole, it kills two and one-half times more children than scarlet fever, although the latter disease is dreaded while measles is regarded as a benign ailment. Dr. Dixon, our State Commissioner of Health, attributes the serious mortality of measles mainly to the difficulty he experiences in making the public appreciate this danger and the imperative need of precautions that will tend to prevent its spread. When to the danger of death we add the many complications that the disease may entail, it is plain that the profession should attach greater importance to it than it now does, and insist on adequate precautions being taken to prevent its extension. Were this done we might, as Dr. Dixon says, referring to the lack of concern among parents, "save many a home from the sorrow of an infant grave."

Pathogenesis.—As Osler writes: "The germ of the disease is unknown," though we know that "the contagium is present in the blood and secretions, and in the skin." But *how* does it awaken its morbid effects? We learn nothing from text-books or from the general literature on this score, and post-mortem findings afford no clue to the process through which the pathogenic material accomplishes its fell work. In brief, it may be said that the manner in which the contagium awakens the symptom-complex of measles is not only quite unknown, but that the question—though its solution would alone afford a solid foundation for rational treatment—has never been seriously studied. In the light of the evidence and conclusions I have submitted in "Internal Secretions," the definition of Measles—and to a certain extent that of other acute exanthemata—is as follows:—

Measles is a highly contagious disease due to irritation of the vasomotor center by a virus of unknown origin—probably the toxin of a specific bacillus.

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All therapeutists recognize that certain agents, ergot,[1] for example, cause a rise of the blood-pressure by exciting the vasomotor center. That other poisons, even the product of some bacillus should be capable of doing likewise, is self-evident, since toxins and endotoxins are but prototypes of various ordinary toxics in their action upon the organism. Now, if the symptomatology of measles—a fact which applies to most of the acute exanthemata—is divided into two clearly defined classes, those evoked by the contagium, and those due to the protective process, it will be seen that the disease *per se* is the result of excitation of the vasomotor center by its specific toxin or virus.

Thus traced to their source, the symptoms of the disease become intelligible. The period of *incubation* which ranges, as a rule, from 9 to 14 days and most frequently 11, represents that preliminary phase when the specific virus is gradually and stealthily, as it were, increasing in the blood, before the child's auto-protective functions have been awakened. As soon as the actual attack develops, the manifestations of overactivity of the vasomotor center, with the resulting constriction of all arteries and veins and engorgement of capillaries, appear. We thus have *coryza,* a *watery discharge* and *sneezing,* all due to engorgement of the Schneiderian membrane, including its glandular and nervous elements; this applies as well to the mucous membrane of the rest of the respiratory tract including the lungs; hence the *pharyngitis,* the *hoarseness,* and the *cough.* The intense engorgement of the vascular terminals is well shown by the numerous *dilated capillaries in,* and the *redness of, the sclerotic,* while hyperæmia of the retina is as clearly suggested by the *photophobia.* Functional overactivity of the lacrymal glands from the same cause is shown by *lacrymation,* and if the palpebral conjunctiva be carefully examined, it will be found that in some cases the blood is being driven with such vigor into the capillaries, that its serum transudes through the walls of these vessels, causing *conjunctival œdema.* The accompanying hyperæmia of the sensory terminals also manifests itself in its characteristic way, *smarting* of the palpebral borders. The arteries and veins being both abnormally constricted, there comes a time, usually the second day, when, in severe cases, the circulation in the cerebral capillaries becomes torpid; the tissues being then inadequately oxygenized, the child shows *dullness of expression* and even *stupor,* while the same condition of the cutaneous capillaries causes the face to appear *slightly livid* or *dusky,* and perhaps *puffy,* owing to œdema.

Why are all the symptoms of the disease restricted at first to the head? My researches have shown that this feature attends more or less all conditions

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[1] "Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: page 1383.

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in which the vascular centers—vasomotor and sympathetic—are primarily affected by the pathogenic toxic and that it is due to the proximity of the cranial structures to these centers. The excess of nerve-energy developed through the excitation of the latter by the toxic corresponding with the degree of this excitation, a mild case may show involvement of the head and shoulders only while a severe one may spread over the entire body.

Again: Why, if the vasomotor center is the structure morbidly influenced by the virus, are not the capillaries likewise constricted? I have repeatedly urged[2] an important feature in this connection, viz.: that capillary congestion, hæmorrhages, œdema, etc., are, in many instances, due to the fact that while arteries and veins are supplied with a muscular coat whose contraction is governed by vasomotor nerves, capillaries are not. It is plain, therefore, that vaso-constrictor impulses will affect the arteries and veins only, and that the capillaries must receive the brunt of the tidal wave which the contracted arteries project into them. Again, the contracted terminal arterioles and venules offering undue resistance to the evacuation of the capillaries, these minute vessels become passively engorged—sufficiently we have seen, to produce intense redness, œdema, duskiness owing to accumulation of CO_2 in their blood, etc. In the *hæmorrhagic forms,* we have clear evidence of intense passive congestion to which the capillaries are subjected; the body may even be covered with purple blotches, blood ooze through the gums, the nasal mucous membrane, etc., constituting the so-called *black measles.* Fortunately, such cases are now seldom encountered.

In the average case, the third day may be characterized by a respite during which all the acute symptoms subside. This is but the lull before the storm, however, and by evening the symptoms described return with renewed vigor, accompanied perhaps by *rapid breathing,* dry *bronchial wheezing,* and a *hoarse croupy cough* which may signify the presence of *laryngitis* with œdema, and be attended with alarming accesses of *dyspnœa,* or *laryngismus.* More or less severe *pharyngitis* with œdema of the palatine arch, and *dysphagia,* are generally present with some enlargement and tenderness of the *parotid* and *submaxillary glands.* All these symptoms are obviously due to excessive hyperæmia and infiltration of the cellular tissues.

About this time, and sometimes on the third day, what is known as *"Koplik's sign,"* appears on the buccal and labial mucous membrane, viz., bright red spots, varying in size from a pin-head to a split pea, each of which is surmounted with minute pearl-white specks. These are the precursors of

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [2] page 19.

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the cutaneous eruption in about 90 per cent. of cases. These are likewise due—but only in part—to the intense passive pressure to which the capillaries of the buccal mucous membrane are subjected, since close examination shows that while the red area is a patch of circumscribed erythema, the white specks are minute vesicles.

The specificity of these patches is mainly due, as is that of the familiar *cutaneous eruption,* which appears soon after the buccal enanthem, to the character of the irritation the virus awakens in the structures through which the body is trying to eliminate it: the mucous membranes and skin. The patches appear first in the former merely because they offer less resistance then the latter. Indeed, the mouth is not alone the seat of an eruption, but the intestinal canal as well, as first shown by Thomas and Bohn. Fuchs observed similar changes in the genito-urinary tract, and Gerhardt likewise in the larynx and trachea. These local specific phenomena are plainly grafted upon the primary vascular lesions due—according to my views to excitation of the vasomotor center by the virus—for as stated by Corlett from whose excellent work on the "Infectious Exanthemata" the above-named authors are quoted: "The earliest pathognomonic disturbances of measles consist in a dilatation of the capillaries and venous radicals in the buccal mucous membrane."

Protective Process. — Various salient symptoms have doubtless been missed in the foregoing syndrome. All such, however, are obviously independent of the disease *per se,* since we find them in all acute infections. The early *feverishness* is the primary manifestation of the reaction which the virus evokes by exciting the test-organ[3] and through it the adrenals and other organs which are instrumental in increasing the bactericidal and antitoxic powers of the blood. While this feverishness soon assumes the importance of *fever* which on the second day may reach 104° F., we often witness a curious phenomenon early on the third day, sometimes on the second: a *remission,* which means that the enemy has been, not vanquished, but repulsed. Indeed, by evening the virus has once more gained headway, and the specific phenomena of the disease, those enumerated under the preceding heading, appear. Concurrently the *fever* rises and may now reach 105° and even higher. The *thyroid gland* often becomes noticeably enlarged at this time, a fact which indicates intense activity in the production of opsonin,[4] while the leucocytosis, which, as shown by Tiliston,[5] begins during the period of incubation, four

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [3] page 1125; [4] page 1087.

[5] Journal of Infectious Diseases, November 5, 1904.

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days before the appearance of Koplik's sign, according to Flesch and Schlossberger,[6] to reach its greatest height during the most marked period of eruption as shown by Reckzeh,[7] exemplify the active participation of phagocytes in the defensive process.

Fortunately, the virus of measles is not, as is that of various other contagious diseases, very resistant, and it is soon destroyed when the proportion of auto-antitoxin in the blood becomes great. Hence the *comparatively* low mortality of the disease—though we have seen that it is a very active destroyer of children. When, however, the adrenal system, which governs the activity of the defensive functions,[8] is depraved as it is among foundling asylum infants, or when it is exhausted by continuous overactivity in the destruction of muscle wastes, as it is after prolonged exertion or marching, etc., and is unable to react efficiently, the virus soon gets the upper hand. It is in such cases that we are apt to observe the most violent manifestations of excessive vaso-constriction and the resulting flooding of the capillaries. Tyson,[9] for instance, states that "a malignant form of measles sometimes occurs, called also 'black' measles, which is very serious—often, indeed, fatal. It is generally epidemic, occurs in institutions and camps, and its presence is characterized by subcutaneous extravasations of blood and hæmorrhages from the mucous membranes."

Complications.—Many of these are merely manifestations of excessive irritation of the vasomotor center, and the resulting capillary engorgement. *Epistaxis, laryngitis, laryngeal œdema,* the early *bronchitis* and *bronchopneumonia, enterocolitis,* etc. When the constriction of the arterioles is sufficiently prolonged to prevent nutrition, tissue necrosis occurs; hence the *purulent otitis, laryngeal perichondritis, gangrenous stomatitis,* and other ulcerative processes occasionally encountered. In some instances the defensive process itself may become a source of complications, the excess of auto-antitoxin in the blood being such as to cause autolysis of the endocardium and abrasion of the valvular leaflets, *i.e.,* endocarditis.[10] The same condition in the joints gives rise to *acute articular rheumatism,*[11] which sometimes gives rise to anchylosis.

The exhaustion into which the adrenal system lapses toward the close of

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[6] Jahrbuch f. Kinderheilkunde, Bd. xiv., S. 724, 1906.

[7] Zeitsch. f. klin. Med., Bd. xlv., Hfte 3 u. 4, 1902.

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [8] page 1072.

[9] "Practice of Medicine," 3rd Ed., page 121, 1903.

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [10] page 1860; [11] page 1868.

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the case leaving the blood abnormally poor in auto-antitoxin, the ubiquitous pneumococcus may multiply in the lungs and provoke *lobar pneumonia.* The patient is thus rendered vulnerable to other bacteria to which the patient may be accidentally exposed; hence the vulnerability to *pertussis, tuberculosis,* and other infectious diseases. Various *visual disorders* may occur as sequelæ of the disease, especially if the child is allowed to fatigue his eyes during convalescence, owing to the prolonged hyperæmia to which the retina has been subjected. Perhaps the most frequent complication is *nephritis* due to the excessive overactivity to which the kidneys are submitted during the passage through them of wastes detritus, etc., and owing, we have seen, to the presence in these organs of foci resembling the exanthem.

Treatment.—The prevailing belief that measles is a benign disease causes text-book writers to attach very little importance to the use of remedies—a fortunate thing, for those who advocate anything give antipyretics and thus antagonize the defensive process.

The period of remission on the second or third day, interpreted as above, indicates the potent influence of the defensive functions. The relapse clearly points to the need of stimulation of the test-organ to raise the efficiency of the adrenal system at this time and so enhance the bacteriolytic and antitoxic properties of the blood. Hence the value of *calomel*[12] recommended by the older practitioners, one of the most potent stimulants of the body's auto-protective mechanism. They used it in too large doses, however, and thus produced *too* active purgation, a drawback which may be avoided by giving small doses, say $^1/_{32}$ grain every hour in a child one year old six or eight times, then every three hours. Illingworth[13] recommends the *biniodide of mercury* in powders of $^1/_{16}$ to $^1/_{32}$ grain three times a day. Petresco[14] also used Van Swieten's solution of corrosive sublimate with success. But calomel is to be preferred provided no other drug be administered at the same time.

A powerful adjunct, one in fact which tends greatly to limit the duration of the disease and the liability to complications is the *free use of fluids* to insure copious diuresis. This facilitates the elimination of the virus, wastes, etc., which greatly irritate the kidneys and cause the high vascular tension which underlies the morbid phenomena of the disease. The tastes of the child should be consulted in order to secure its co-operation, either warm or cold drinks, lemonade, barley water, mallow tea, etc., being ordered in fixed quan-

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [12] page 1146.

[13] "Abortive Treatment of Specific Disorders," page 10, 1888.

[14] Cited by Shoemaker: "Therapeutics," page 527, 1906.

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tities during the twenty-four hours. An important feature of the treatment is the addition of *sodium chloride* to the diet. Not only does it increase the bacteriolytic and antitoxic properties of the blood,[15] but as shown recently by Ramus,[16] common salt prevents the loss of weight which is often marked in this disease—a fact readily explained when we consider that excessive constriction of the arterioles and venules by interfering with the circulation in the capillaries inhibits nutrition. It may be added to the *milk,* a valuable food in measles, since it adds but litle waste to the excessive quantity already in the blood; or, as recommended by Madison Taylor, the ordinary saline solution may be used as beverage, Todd having found that this mode of use was as efficient as hypodermoclysis, venous infusion, etc., in febrile processes. *Junket* and *gruels* and *soft farinaceous foods* also produce a limited quantity of wastes, thus tending to keep the blood-pressure low. The slight diarrhœa that is usually observed in measles is not an untoward manifestation as generally believed, but an effort of the intestines to asepticize[17] and promptly eliminate the dejecta, which include substances capable of increasing the severity of the exanthem and of irritating the kidneys.

When signs of broncho-pneumonia or lobar pneumonia appear, opiates should be avoided since they produce their effects by causing further constriction of the arterioles.[18] *Creosote carbonate* 3 to 5 grains every three hours, not only relaxes the arterioles, but enhances the antitoxic properties of the blood they admit into the pulmonary capillaries.[19] Paton[20] found *guaiacol carbonate* given with an equal quantity of powdered sugar, valuable in these cases. While its action is similar to that of the former drug, I am inclined to regard it as too depressing.[21]

Antipyretics are never indicated; the coal-tar products lower the temperature by exciting the sympathetic center[22] shutting off the blood from the capillaries, thus merely obscuring the superficial hyperpyrexia. Both hot and cold baths enhance the formation of toxic wastes and increase the body's asset in blood-pressure raising substances; better results are obtained by *cool sponging* or *tepid baths* which facilitate the dissipation of heat from the skin. When the temperature is high and there is great restlessness and cutaneous burning, *sodium bromide* or *chloral hydrate,* both of which, by depressing the hyper-

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [15] page 1386.

[16] "Thèse de Paris," 1906.

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [17] page 1374; [18] page 1272; [19] page 1357.

[20] Lancet, November 21, 1903.

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [21] page 1360; [22] page 1282.

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excitability of the vasomotor center,[23] relieve the intense vascular tension. As this applies as well to the renal vessels, diuresis is also facilitated, a beneficial effect of chloral observed by J. C. Wilson[24] in scarlatina.

Considerable attention should be paid to the eyes. The presence of retinal hyperæmia, as shown by the photophobia, renders a darkened, though well-ventilated, room necessary. The blepharitis and conjunctivitis should be treated by frequent washing of the eyes with 15-grain to the ounce *boracic acid* solution. If respiration through the nose is markedly impeded, *saline solution* containing 1 grain of *cocaine* to the ounce, sprayed in small quantities into the nostrils every few hours affords considerable comfort. During convalescence the child's adrenal system is debilitated as a result of the overstimulation to which this protective mechanism was subjected during the disease. Tonics, *strychnine* to stimulate the adrenal center,[25] *iron* to facilitate the formation of hæmatin,[26] and *cod-liver oil* to supply carbohydrates, to say nothing of what *iodine*[27] it may contain, having proven most effective.

The importance of prophylaxis has been emphasized at the beginning of this article. Corlett[28] aptly says in this connection: "It has been shown that the restriction and absolute control of measles is not only feasible, but highly to be desired as a means of public safety. By strict quarantine the disease has been eradicated from certain communities, which have enjoyed complete immunity during long periods. The greatest obstacle to the segregation of measles arises from the fact that in itself it is a mild affection and the public are indifferent, not only about promptly reporting it to the health authorities, but of efficiently carrying out the necessary restrictions against its spread. In this country it is not long since measles was allowed to prevail, and parents sometimes wilfully exposed their children, believing that sooner or later they must have the disease. In the light of modern sanitation this has been conclusively shown to have caused the sacrifice of innumerable lives and to have destroyed in others the organs of hearing." The child should be quarantined at least four weeks from the onset of the disease. When children are inevitably exposed to it, the use of *calomel* in the manner already described suggests itself as a potent prophylactic, since it increases markedly the efficiency of the defensive mechanism.

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [23] pages 1318 and 1338.

[24] Cited by Royer: "Therapeutic Gazette," January 15, 1907.

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [25] page 1225; [26] page 1247; [27] page 1159.

[28] "Treatise on the Acute, Infectious Exanthemata," page 330, 1901.

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Cyclopædia of Current Literature

ADENOIDS AND ADENOID TUBERCULOSIS, PATHOLOGY OF.

With many American writers, Osler holds the view that the development of adenoids is probably dependent on a disturbance of the general lymphatic system, and is closely allied to, or a mild type of, status lymphaticus. Heredity seems to be an important factor in the development of tuberculosis of adenoids. Primary tuberculosis occurs in a certain proportion of all cases, but it is not necessarily an important factor in the production of adenoid hypertrophy. Since enlarged cervical lymph glands have disappeared on the removal of hypertrophied tonsils and adenoids, it demonstrates the fact that these latter structures are important channels of infection. E. Hamilton White (American Journal of the Medical Sciences, August, 1907).

ADENOIDS IN INFANCY.

Although very little consideration is usually given to the presence of adenoids in the infant, the author believes them to be very common, and the evil results even greater than in childhood. The anatomical construction of the pharynx and postnasal space in infants makes even a small amount of adenoid tissue a marked impediment to respiration. This obstruction causes mouth breathing, oxygen is thereby improperly supplied to the system, disturbances in nutrition is very apt to result, and rickets is likely to follow this interference with proper nourishment. Continued colds, chronic snuffles, catarrhal laryngitis, and spasmodic croup also show a tendency to develop in the presence of adenoids, and in the great majority of cases will disappear upon the removal of this lymphoid tissue. In many patients, on account of the frequent colds contracted, adenoids can be held directly responsible for the attacks of otitis media so often seen in infants. John L. Moore (Journal of the American Medical Association, November 9, 1907).

ALIMENTARY INTOXICATION IN INFANTS.

It is more reasonable to consider the alimentary intoxication in infants as coming from bacterial products in the intestine, than as Finkelstein does, as due to faulty metabolism. The writer enumerates the three recognized types—the indolic, the saccharobutyric, and that type in which the proteids, hydrocarbons and carbohydrates are subject to bacterial decomposition, describes their mode of production and asserts that in any case the clinical syndrome known as alimentary intoxication deserves clinical recognition. Sugar is by no means a harmless substance. The old maxim that sweets may produce severe illness in children is corroborated, he asserts, by modern observations. He can recall many cases of sudden collapse in children fed on condensed milk and other foods high in carbohydrate content. The writer feels convinced that these were cases of alimentary intoxication. Even in breast-fed infants, the collapse may occur if they are fed on other foods also. J. Zahorsky (Journal of the Missouri State Medical Association, December, 1907).

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APPENDICITIS, ETIOLOGY.

The writer describes a case of appendicitis due to the presence of oxyuris vermicularis. He removed the appendix, which had all the appearance of an acute infection with marked congestion of the blood-vessels, the only peculiar feature being a bulb-like expansion of the tip into a mass about one inch long and about double the caliber of the remainder of the organ. On incising the appendix it was found that this mass consisted of a thick, mucoid substance, with a constriction separating it almost completely from the appendiceal canal, and in this jelly-like substance was a large number of worms of various sizes of development, and moving around freely. Some were quite small, others of full development. Altogether there were about one hundred of these worms. Microscopical examination confirmed the diagnosis of the *Oxyuris vermicularis* as being the variety of worm observed. Rectal examination of the patient showed, as was expected, an abundance of these worms present. They had spread far up into the colon until they reached the region of the appendix, where some of the ova became imprisoned and developmental changes occurred, causing the attack. The patient made an uneventful recovery. M. C. Thrush (Medical Record, December 28, 1907).

ARTERIOSCLEROSIS.

While arteriosclerosis is directly productive of apoplectiform attacks and of vertigo and plays a part in the loss of memory as well as of other failing powers of involution, it does not produce headache except as the immediate result of apoplectiform attacks. Arteriosclerosis naturally appears in a certain proportion of elderly neurasthenics as in any group of elderly persons, but observations fail to establish its causative influence, and the further study of this branch of the question is desirable. Renal degeneration is a prominent factor in the cardiac enlargement often present in cases of arteriosclerosis. Arteriosclerosis without cardiac enlargement or renal degeneration is only exceptionally accompanied by a very high blood pressure. If either cardiac enlargement or renal degeneration is present, moderately high blood pressure; if both are present, very high blood pressure, is the rule. G. L. Walton and W. E. Paul (Journal of the American Medical Association, January 18, 1908).

ARTERIOSCLEROSIS, THE RADIAL ARTERY AND.

From a careful histological study of the changes found in the radial artery, the authors conclude that, whereas in old age a thickened radial artery is normal, an unduly thickened radial artery at an earlier age may mean one of two thing: that the vessel has been subjected to unusual or exceptional strain, or that the vessel from inherent weakness or other abnormality has been unable to cope with conditions which might ordinarily be regarded as normal. The artery has thus been obliged to fortify itself by progressive thickening of its walls. As a rule, although there are striking exceptions, when the thickening of a radial artery is unduly marked, similar changes occur in the mesenteric artery and aorta. W. S. Thayer and M. Fabyan (American Journal of the Medical Sciences, December, 1907).

ARTHRITIS, INFECTIOUS, STRAIN AS A CAUSATIVE FACTOR IN.

Several such cases are reported by the writer, an analysis of which shows many

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common factors, namely, vocation, seat of disease, sequence of joints attacked, symptoms, and relief by treatment. In considering vocation as a factor one must not only analyze the character of the work, but also the conditions under which it is done. Careful investigation showed that all these patients were tailors working in dry, well ventilated rooms, not exposed to drafts and in an even temperature. Their work, ten hours a day, was chiefly on heavy goods, mostly men's clothes.

The symptoms were first noted in the thimble finger, and the histories showed a progressive infection of the joints in the right hand before any symptoms occurred in the left. The onset was more or less insidious and symptoms not especially acute, but in all the cases, intensified greatly with use. The pain, intermittent in character, was more in the nature of a soreness rather than the throbbing pain of an infection. The symptoms were not affected to any extent by sudden changes of temperature. In all the cases there was absolutely no indication of any trouble in any other joint in the body. In other words, the trouble was absolutely confined to the hands. The problem confronting one in these cases is a serious one, as we have a patient otherwise perfectly well but incapacitated for making her daily bread. Such a condition of affairs brings about the most pronounced type of mental depression.

The following line of treatment was pursued in all the cases: Urinary examination showed a marked hyperacidity in all the cases. General treatment, omitting all meats, forcing liquids; sodium benzoate, 5 grains, t. i. d., to neutralize acidity. Local treatment, baking daily. This was done entirely by electricity. In the more acute cases a very intense heat was used, namely, a 100 candle-power light, applied for a period of twenty minutes, close enough to be tolerated by patient over bare skin. In other cases, a small wooden box, one foot square, was made with two small apertures, large enough to insert hands in one end. The box was lined with asbestos to prevent radiation, and fitted up with six 16 candle-power incandescent lights. A temperature of 300 degrees F. was maintained here for a period of twenty minutes. The results were most gratifying. The counter irritation of the heat produced the usual hyperæmia to a marked degree, and all the cases showed a gradual diminution of pain, with a return on failure in systematic baking. The patients pursuing the treatment conscientiously for two months had entire relief from pain, with ability to return to work. J. D. Adams (Boston Medical and Surgical Journal, December 26, 1907).

CARDIAC DILATATION AND INFECTIOUS DISEASES.

The causes of cardiac dilatation are discussed by the writer and he divides cases into four principal groups: 1. Cases in which no special cardiac symptoms are noted until the sudden onset of a rapidly fatal cardiac paralysis. 2. Cases in which no special cardiac symptoms are noted until the sudden onset of a dangerous cardiac weakness, followed by eventual death or recovery. 3. Cases in which the loss of muscular power appears to be progressive and the circulation becomes more and more embarrassed until death ensues. 4. Moderate or severe cases which develop more or less rapidly, but which tend to partial or complete recovery. This includes the vast majority of the cases.

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Seven cases are reported by the writer, illustrating the various types and the following points are emphasized: In all toxæmias the heart is more or less affected. This is partially true of the acute infectious diseases. In typhoid, influenza, rheumatism, diphtheria and scarlet fever the heart involvement is frequent and is often out of all proportion to the severity of the original attack. The symptoms of cardiac weakness may develop at any time after the beginning of the attack, but most commonly after convalescence has begun.

The first evidence of cardiac involvement is revealed by changes in the first sound heard at the apex and by diminished tension in the arteries. If the loss of cardiac tone is sufficiently great, dilatation follows. This is characterized by irritability of the heart, softness, weakness, and irregularity of the pulse. Symptoms of failing circulation depend on the degree of muscular weakness and extent of dilatation. A dilatation outward to one finger's breadth beyond the nipple line is usually recovered from; two fingers' breadth is exceedingly dangerous; and three fingers' breadth is usually fatal. Vomiting in a case of dilatation is usually the precursor of sudden death. All patients with infectious diseases should be carefully watched and appropriate measures taken to reduce the work of the heart to a minimum, prevent strain, and eliminate toxins as rapidly as possible before symptoms of heart failure threaten or are present. In every case of infectious disease the heart should be frequently examined until convalescence is fully established. J. E. Blake (New York State Journal of Medicine, November, 1907).

CONVULSIONS IN CHILDREN.

Convulsions *per se* do not constitute a morbid entity; the underlying cause must be sought, and failure to recognize this elementary principle of pediatric diagnosis has often led to disastrous results. Predisposing and exciting causes must be recognized, and among the predisposing causes, infancy, with its imperfectly developed nervous inhibitions, and the potent influence of heredity are especially mentioned. In diagnosing the exciting causes, it must be remembered that the attack may result from direct irritation—irritation of the cortical motor cells or from reflex or toxic irritation of the same, or of the spinal reflex centers. In the last case the convulsion is usually tonic in character. The success in treatment directly depends on a correct etiologic diagnosis. Of the utmost importance is the determination of the temperature, the obtaining of a correct history, the age of the patient, the presence or absence of unconsciousness, the character of the onset, and the degree of involvement. Fever generally indicates some toxic condition, possibly some acute infectious disease, but often of gastrointestinal origin. Irregular temperature may suggest meningitis. Normal or subnormal temperature is possible with some toxæmias, brain disease, or reflex irritation. Convulsions in a very young infant may have a different signification from those occurring in an older child. The writer is skeptical as to dentition as a frequent cause. Epilepsy should not be diagnosed until other causes are eliminated. The protean reflex causes need careful study.

The first thing in treatment is removal of the cause, but as this can not always be determined, a rational treatment is that which will control the con-

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vulsion and be most likely to remove possible causes. Very recent dietetic errors may call for emetics or washing out of the stomach. Hydrotherapeutic methods, properly carried out, are more generally effective than any others, and more good can be accomplished by colonic irrigation than any other single remedy, in the opinion of the writer. The fluid must be sterile. Balneotherapy is also very useful. Other methods failing to check the attack, the small intestine must be cleared out, and for this, full doses of castor oil are recommended as preferable. Hypnotics and antispasmodics are usually called for, and the best hypnotic is chloral hydrate, in small doses, in water, following the colonic irrigation. These remedies must be used only after the temperature has been reduced and the bowels emptied. Morphine is seldom needed. Surgical treatment is advised when needed to remove an exciting factor. Gum lancing is seldom required. H. Lowenburg (Journal of the American Medical Association, November 23, 1907.)

DIARRHŒA, CHRONIC: TREATMENT.

Attention is called by the writer to a number of important points in the treatment of diarrhœa. When the diarrhœa is due to abuse of cathartics, opium is indicated; but in case of dyspeptic or stercoral diarrhœa, a purgative is required, and measures to dislodge helminths when the diarrhœa is due to parasites. In nervous diarrhœa, etc., the underlying affection requires treatment, as also the organ involved when the diarrhœa is of reflex origin. If it is the result of too much tobacco or morphine, they should be suppressed. Regulation of the diet is of great importance, except in nervous diarrhœa; in this form restriction of diet generally does more harm than good. It has been the author's experience that obstinate nervous diarrhœa has frequently been checked with surprising rapidity when the patients were allowed to return to a mixed diet. General tonic measures are indicated to improve the general condition in all forms. The best basis for appropriate regulation of the diet is by systematic examination of the stools on a Schmidt test diet. As this or that article of food is seen to be imperfectly digested, the diet should be regulated accordingly. In fermentative processes the albumin, and in putrefactive processes the carbohydrates, are concerned. If examination of the stools shows no mucus or putrefaction to suggest a catarrhal affection of the intestines, and there is nothing to indicate organic trouble, then the diet need not be too much restricted. If the discovery of scraps of connective tissue in the stools on the test diet shows some disturbance in the stomach functioning, then the amount of meat should be reduced, especially raw and smoked meats, and soft foods should be ordered—broths, soups, zwieback, etc.

The scraps of connective tissue are also a guide for further treatment. In case of deficient or absent secretion of gastric juice, hydrochloric acid should be given in large doses. The writer has never witnessed any better results from dog gastric juice than from hydrochloric acid alone. In case of motor insufficiency and with excessive mucus or hydrochloric acid production, it is advisable to rinse out the stomach. If the cause of the diarrhœa is located in the large intestine, benefit will be derived from flushing the intestines. If there is evidence or only suspicion of disturbance in the secretion of the pancreas, pancreatic extract should be tried.

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Drugs to arrest the diarrhœa should be given very cautiously.

Examination of the stools is indispensable. Ochre-colored stools in adults suggest disturbances in the small intestines; green stools are encountered in jejunal diarrhœa in adults; green stools in infants are due to an increased proportion of alkali in the upper sections of the intestine, according to Pfeiffer, or to the action of an oxidizing ferment. Fermenting stools generally indicate milder intestinal disturbances; they are usually light brown, foamy, and have an acid or cheesy smell. Putrefying, dark-colored stools, as a rule, indicate serious trouble, such as dysentery or carcinoma in the large intestine. A peculiar smell like glue was observed by Quincke and Roos in amœbic diarrhœa. Examination of the remains of the food in the stools after a Schmidt test diet is very instructive. Visible remains of muscle fiber indicate disturbance in intestinal digestion; larger scraps of connective tissue locate the disturbance in the stomach. Blood is rarely found in the stools in case of simple catarrhal conditions. It is observed more frequently in nervous stagnation. Macroscopic traces of pus always mean ulceration or perforation of the mucosa. A pure suppurative secretion does not occur in case of simple catarrh of the intestinal mucosa. Microscopic examination of the remains of muscle fiber is important. Large amounts with distinct striation, especially when the muscle fibers are golden yellow (bilirubin), rather than brownish yellow (hydrobilirubin), point to catarrh of the small intestine. If nuclei are still perceptible in the scraps of muscle, some disturbance in pancreatic digestion may be surmised.

The absence of nuclei is not conclusive as to normal conditions, for putrefactive processes are liable to destroy the nuclei. Remains of starch suggest disturbances in the small intestine and in pancreatic digestion. Isolated disturbances in the stomach and large intestine do not impair the digestion of fats. Affections of the pancreas are not inevitably followed by passage of a larger proportion of fats, yet the stools, in case of pancreatic affection, generally show much less splitting of the fæcal fats, consequently microscopic examination of the stools shows neutral fat.

Chemical examination of the stools is too tedious for the general practitioner, although in dubious cases he might find the corrosive sublimate and fermentation tests very instructive. Purely functional diarrhœa is rare. When pure mucus, without admixture of fæcal matter, is observed, the catarrh is in the lower part of the large intestine, rectum, flexure, or descending colon. Fluid fæcal masses, mixed thoroughly with mucus, speak for the upper parts of the large intestine or the small intestine. The latter is indicated especially when there are flakes of mucus, cell nuclei, abundance of muscle fibers, free grains of starch, positive bilirubin test, and fermentation.

Acute catarrh of the large intestines induces diarrhœa, but not catarrh of the small intestine, except when the upper part of the large intestine is involved. Sometimes a cancerous affection of the intestines begins with diarrhœa. The writer has encountered a number of cases of rectal cancer, in which the only symptom complained of was diarrhœa. Such patients frequently attribute the onset of the diarrhœa to some error in diet or exposure to cold. These facts suggest the importance of bearing cancer in mind when confronted with an obstinate diarrhœa, especially if the patient is elderly and has previously had regular

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stools, and if there are pains and tenesmus. High rectal cancer can sometimes be detected by palpating as the patient stands, stooping forward, when it escapes detection otherwise. L. Kuttner (Deutsche medizinische Wochenschrift, October 24, 1907; Journal of the American Medical Association, November 30, 1907.)

DIPHTHERIA, PRIMARY NASAL.

Primary nasal diphtheria is a more common disease than is ordinarily supposed. It is usually a benign affection, the constitutional symptoms being not marked, or even entirely absent. The primary form is very seldom malignant *per se*, and especially is this true if it remains confined exclusively to the nares. It displays a tendency to limit itself to the nose. When it does spread to portions of the respiratory tract lower down, the severity, that is, the toxæmia and systemic disturbance, seems to increase *pari passu* with and as a direct result of such extension. There is a decided tendency towards chronicity. The prognosis is, as a rule, good. Paralytic phenomena, such as loss of knee jerks, paralysis of the palate, etc., are extremely rare. It is capable of acting as a focus of infection, and the resulting cases may be of a malignant type. The importance of early detection of this disease by bacteriological examinations of all cases of persistent purulent rhinitis of doubtful origin, especially in children, can not, therefore, be overestimated. G. W. Stimson (New York Medical Journal, December 14, 1907.)

EPILEPSY, THE NOSE IN ITS RELATION TO.

The writer considers that epilepsy is a normal symptom consequent on overstimulation of the higher centers of the cord and brain. This overstimulation is largely reflex in its characteristics. The normal nerve reaction may become pathological, even when it is irritated by a comparatively insignificant peripheral stimulation. Epileptic seizures are more often due to reflexes from the Schneiderian membrane through the fifth nerve than to other causes.

Appropriate treatment of the intranasal defects may be expected to lessen greatly the number of attacks, and in favorable cases to remove wholly the peripheral irritating cause of the epilepsy, which will allow cessation of the seizures.

In the epileptic neurosis, predisposition or weakened resistance of the central nervous system is due to other causes than the slight exciting peripheral irritations which have previously lessened the self-protective power of the higher nerve centers. W. S. Bryant (Medical Record, November 23, 1907).

DYSENTERY, IPECACUANHA IN.

The papers in The Military Surgeon for January, 1908, which refer to the treatment of dysentery are interesting and important. One details five severe amœbic cases, all successfully treated by ipecac. The other asserts that the ipecac treatment was nearly always followed by relapse, but praises it as probably curative against the Shiga bacillus and as a valuable adjunct in amœbic dysentery. Now-a-days a writer is liable to the charge of incompleteness, one may say of imperfect knowledge, if his histories are not substantiated in the laboratory, notwithstanding the necessity for such confirmation would throw out of court enormous masses of earlier clinical observations. That the dysenteric amœbæ and bacilli have been discovered only comparatively recently, by

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no means alters the fact that dysentery in its various forms has been a scourge, chiefly in tropical countries, for untold ages and has been treated for long periods of time with varying success by different methods. The writer believes that it is also a fact that no treatment has been so uniformly successful, regardless of the special cause of the disease, as that by ipecacuanha when the medicine has been properly, which sometimes means persistently, administered. Valuable as is the science of pathology, much of the art of medicine, especially of therapeutics, has been developed by empiricism, and the practical treatment of dysentery is a part of that empirical progress. The *radix antidysenterica* justified its name, until through ignorance it fell into disrepute. Revived as a practical specific by Docker in Bengal, somewhat more than fifty years ago, it rarely fails in any stage, acute or chronic, to ameliorate the symptoms and heal the disease. It is a specific in the same sense that quinine is a specific; in occasional cases each remedy fails. This may seem a bold statement; but ipecac has been ignorantly condemned in the house of its friends. The fact that in health an overdose induces innocent emesis, has given it rank as an emetic and has masked the more important fact that, in appropriate disease, it may be given non-emetically in quantities which to the inexperienced would seem enormous. It is probable that the portion of every medicine should be graded by the severity of the case. That is certainly so with ipecac when administered in dysentery, and the writer has seen an old man promptly rescued from apparently impending death, an acute attack immediately cut short in a lady, delicate children relieved, and soldier after soldier cured (if that objectionable word may be used) by ipecac and ipecac alone, in quantities appropriate for each. The author has no personal doubt that the normal action of ipecac is that of a stimulant to the organic nerve, but this is no place to attempt to fit an hypothesis to a condition. Since the early seventies dysentery has not worried him, if he could control the patient and be sure that the drug was pure. On that account, using Major Raymond's paper as a text, he urges medical officers, in whatever climate or however the dysentery patient may have been reduced, to administer faithfully and non-emetically large doses of ipecacuanha. It would be miraculous if any human treatment never failed; but the writer has no personal knowledge of such failure. A comfortable paper for the skeptical to read is Maclean's on Dysentery in Reynolds' System of Medicine. Facts outlast theories, and however antiquated some of the doctrine may appear in the light of modern pathology, the results obtained cannot be disputed. Brig. Gen. Alfred A. Woodhull (The Military Surgeon, February, 1908).

ENDOCARDITIS, MALIGNANT.

Malignant endocarditis develops on the injured or diseased endocardium as a secondary localization in the bacteriemia or pyemia of infectious disease. It may be incited by many different species of bacteria, but usually the pneumococcus, streptococcus, staphylococcus, or gonococcus is present. It may be associated with any of the infectious diseases of man, but chiefly with pneumonia or some form of sepsis. As a complication of previous disease, malignant endocarditis is of so serious a nature and so often outlives or dominates the parent infection that separate consideration of it is justified. The

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exceptionally grave tenor of the prognosis is due to the anatomical situation of the lesion.

The exceptional studies of Rosenbach, of Wyssokowitch and of Prudden have demonstrated the importance of previous injury of the endocardium in determining the secondary localization of the infection in the heart, a fact of definite practical significance to both surgeon and physician in the prophylaxis of the disease. This study has also shown that the lesions of the endocardium once freed of their mycotic nature tend to heal, and thus recovery, when it occurs, differs in no essential from that of infection in general, a fact as yet of little practical value owing to the inadequacy of present methods of specific treatment in bacteriemic disease.

Apart from accidents of infarction or thrombosis, the course, the prognosis, and the treatment of malignant endocarditis, as of infection in other parts of the body, depend primarily upon the balance between the two opposing factors of infection, the body cells and the bacterial cells. In this complex mechanism of infection the different processes of immunity in the body tissues, on the one hand, and on the other the development of the bacteria, their susceptibility, and virulence, vary in their relation one to the other with different bacterial species and under different conditions. Since the control of these subtle conditions is beyond the reach of modern therapy, the manifestations of the disease, even the elevation of temperature, are to be regarded in general as indicative of the effort of the body tissues to maintain a favorable balance. The limitations of rational treatment are thus apparent and departure from a rigid, conservative, personal, or physiological hygiene is sanctioned only under exceptional conditions arising in the individual cases. Augustus Wadsworth (Medical Record, December 28, 1907).

FRONTAL SINUS DISEASE, PERSONAL EXPERIENCE WITH.

Following the study of some 18 cases, the author comes to the conclusion that the frontal sinus is perhaps the most important of the accessory cavities of the nose. Its comparatively small size, its nearness to the brain, its tendency to become blocked up by a large middle turbinate, and the severe pain which often accompanies its diseases all combine to make it one for the most careful consideration of the rhinologist.

In the treatment of these patients, the writer found only a few cases in which the mucous membrane of the nose could be sufficiently reduced by the application of cocaine and an epinephrin preparation to give fair drainage. Usually the middle turbinate formed a barrier to the introduction of the probe into the sinus, and the anterior end had to be removed before treatment could be instituted. The author's observations confirm the opinions of other investigators that the light test is of little value in frontal sinus disease. In connection with other symptoms and signs, transillumination is of some value, but taken alone, it is of no value whatever. Most cases can be relieved of pain by intranasal treatment, but if headaches persist after prolonged treatment, external operation is advised. Richard H. Johnston (American Medicine, November, 1907).

FRONTAL SINUS, SIMPLE AND SAFE OPERATION ON THE, BY THE INTRANASAL ROUTE.

In the performance of this operation, which is done under local anæsthesia,

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the author uses two frontal sinus rasps, two tapering curved chisels, and three protectors to guard the vital parts from injury. The chisels are so constructed as to have dull tapering edges, so that if the edge of the instrument should touch the lamina papyracea of the ethmoid bone or the tabula interno of the frontal bone, it will slide off, and then by the time the chisel has traveled through an half-inch space, under proper care, it would not have force enough to penetrate, even if the edges were sharp. The sinus is rasped out, packed with sterile gauze soaked in carbolized petroleum, to which has been added a few drops of the oil of cloves. The gauze is removed in twenty-four hours and the patient left alone, except to prevent adhesions between the septum and the external wall. The author believes this method can be done whenever an external operation is indicated. It permits good drainage, prevents ugly external scarring, and is of great assistance in diagnosing the presence of cholesteatoma or tumors in the sinus. R. H. Good (Journal of the American Medical Association, August 31, 1907).

GASTRIC CANCER.

Cancer of the stomach, according to the writer, is much more common than many realize. The absence of any medical cure and the fact that the success of surgery depends on its employment in time indicate the necessity for early diagnosis. The ordinary medical means of diagnosis may be found in the history, particularly in regard to inflammation as to the past ulcer, age and loss of weight. In patients with gastric stasis weight should always be taken after the stomach has been evacuated, as the contents of the stomach may weigh from one to several pounds. If the preceding examination gives the least ground for suspicion of cancer, chemical tests, Salomon's test, mechanical and other tests—*e.g.*, aspiration of the stomach, inability to pass the stomach tube more than fifteen or sixteen inches, presence or absence of the deglutition sound, etc. —should be resorted to. It is quite as important to exclude cancer in its absence as to make a positive diagnosis when it is present. Those who suppose that a positive or negative diagnosis may be made on the strength of chemical examination of the gastric juice should at once disabuse themselves of this idea. Careful, but not too prolonged, thorough examination, including laboratory tests, would result in the fact of much less needless gastric surgery while far more cancer patients would be forthcoming at a stage of the disease warranting radical operation. As to the time allowable for carrying out medical means of diagnosis in advanced conditions, diagnosis may be made frequently at the first or second visit. Radical operation is then usually out of the question, but sometimes palliative operation may be of benefit. In earlier cases two or three examinations within a week may establish a condition warranting radical operation, or at least a gastroenterostomy may prolong life. In still earlier cases two or three weeks' time may suffice to diagnose the condition in which, under favorable circumstances, resection may be done. The chief points to be observed in these various classes of cancer patients regarding operations are: The physician should be reasonably certain of the presence of cancer. He should usually know when the case is beyond surgical relief. In cases considered operable he should have a good idea that the conditions warrant at least a palliative, per-

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haps a radical, operation. Ulcer cases with stasis may be included here. Some of them can not be differentiated from cancer by medical means. In certain cases, either early or late, he should know if the cancer is located at the cardia, and be aware that no operation except gastrotomy as a last resort should be attempted. In the remaining small portion of cancer cases, the true conditions perhaps can not be learned by medical means within three weeks' time. In most of the cases, perhaps all, a surgical exploration should certainly be made. R. F. Chase (Boston Medical and Surgical Journal, November 28, 1907).

GOUT, HYDROCHLORIC ACID IN.

The writer reviews his five years of experience with hydrochloric acid in the treatment of gout. He states that he has been taking from 50 to 60 drops of concentrated hydrochloric acid every day for more than five years, and some of his patients for nearly as long. The good action and harmlessness of such large doses of hydrochloric acid are probably due, he asserts, to the neutralizing of the acid by the alkalies in the food and beverages. This assumption is confirmed by the absence of irritation of the intestines, shown by the lack of diarrhœa. He presents evidence to sustain his theory that gout is the result of an inherited insufficiency of the gastric glands in the fundus, the logical treatment of which is to supply the lacking hydrochloric acid from day to day and year to year. Among the testimony he cites are the deficiency of hydrochloric acid in the stomachs of the gouty, and Silbergleit's announcement that in a long series of experiments on animals the formation of urates in artifically induced foci of gout was regularly prevented by systematic administration of hydrochloric acid, while under alkalies the urates were as regularly deposited.

The writer considers that the deficiency of hydrochloric acid is primary in gout while it is secondary in all other conditions. The hydrochloric acid is not able to arrest an attack of gout—it merely corrects the general tendency to gout, and hence must be taken all through life, as there is little hope of the congenitally defective stomach glands becoming capable of normal functioning.

In the author's experience with 390 gouty patients, the best results were attained in those in whom the disease was of comparatively recent development. In the old, chronic cases the general health is improved, the course of the disease is arrested, and the patients are relieved more or less of their pains, while danger of involvement of internal organs is averted. Attacks of pain may still recur, but are far less severe, as a rule. A small number of patients state that they experienced no benefit and that the disease is progressing, but the physician, even in these cases, can see evidences of benefit. Falkenstein (Berliner klinische Wochenschrift, December 2, 1907; Journal of the American Medical Association, January 18, 1908).

HYDRASTIS, EFFECTS OF, ON BLOOD PRESSURE.

The most constant and conspicuous effect of the intravenous injection of hydrastis is a prompt fall of blood pressure. With small doses the pressure promptly returns to normal and there may be a slight rise above normal. With larger doses (from 0.07 c.c. to 1 c.c. per kilogram of body weight) there is only partial recovery from the fall of blood pressure or it may remain low. The pressure phenomena are attributable to

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depression of the cardiac muscle causing the fall and to stimulation of the muscle causing the rise. Very large doses depress and paralyze the vagus and vasomotor system; otherwise there is no evidence deduced from the myocardiograms and oncometer that the vasomotor system plays any important role in the blood-pressure changes.

The two principal alkaloids of hydrastis, hydrastin and berberin, cause qualitatively the same blood-pressure changes, although berberin is the more active and is responsible for about 85 per cent. of the effect of hydrastis, hydrastin causing the remaining 15 per cent. Hydrastis given by the mouth or hypodermically causes no change in the blood pressure, heart rate or respiration.

Hydrastinin—an artificial alkaloid derived from hydrastin—causes a rise of blood pressure above normal, which is usually preceded by a slight fall when injected intravenously. The rise is well sustained and is principally caused by stimulation of the cardiac muscle.

The writer states that the results of this investigation do not support the clinical theories concerning hydrastis. It is possible that conditions in man and in disease may modify the actions observed by him, but this is rather improbable. At least the uniform contradiction of the experimental results and clinical opinions demands that the latter be examined critically before they are accepted. W. W. Williams (Journal of the American Medical Association, January 4, 1908).

ICTERUS NEONATORUM.

The writer believes that both the liver and the disintegration of the maternal erythrocytes are responsible for this peculiar kind of jaundice, which is physiologic. As to the absorption of the surplus of bile pigments which finally causes the jaundice, three possibilities are present: First, as the terminal capillaries which surround the hepatic cells constitute a portal system, the intravascular and perivascular pressure equals zero. If the hepatic cells are overfilled, the pressure within the bile capillaries will be forcibly raised after a time, and the biliary pigments will penetrate into the lymph spaces and reach the general circulation through the thoracic duct. Second, if an increase in the viscidity of the bile due to a state of saturation with biliary pigments is assumed, the possibility of temporary plugging of the bile capillaries might be considered. In this case, the chances of absorption of the bile through the lymph spaces are evident. Third, another way of absorption, peculiar to the new-born, is through the ductus venosus, as pointed out by Quincke: The flow of bile into the intestines not being impaired in icterus neonatorum, but rather increased, part of it is reabsorbed, gathered into the portal vein, and partially poured into the vena cava through the ductus venosus, which remains unobstructed during the first few days of extrauterine life. A. Granet (New York Medical Journal, December 21, 1907).

INFLUENZA OF THE NOSE, THROAT, AND LARYNX.

The treatment of influenza of the nose, throat, and larynx is abortive, local and general, besides the treatment of the complications. The abortive treatment consists in the local use of astringent antiseptics which some times abort and often ameliorate the virulence of the infection if they are applied immediately on the appearance of the first

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sign of local discomfort, pain, or œdema. Silver nitrate in 10 per cent. solution, painted on the affected area has given much satisfaction. Alcohol 99 per cent. with equal parts of glycerin has worked nearly as well.

Local treatment is directed to the relief of the œdema, assuaging pain and tenderness, and cleansing and partially sterilizing the mucous surfaces. In the nose and throat this may be accompanied with silver nitrate; a solution in strength of from 2 to 5 per cent. applied with a swab has given good results. Argyrol, up to 30 per cent., on a swab is good. When there is a false membrane, a spray of hydrogen peroxide is indicated. After the acute stage is passed and the œdema gone, a spray of Dobell's solution seems to facilitate expectoration of the mucopurulent secretion. When the discharge has lessened, an alkaline aromatic spray is desirable to finish up with. Hydrogen peroxide gargle is indicated for the throat if a purulent condition exists there. In the larynx the applications must be considerably reduced in strength. Silver nitrate in 2 per cent. solution can be applied with a swab or spray after cocainization. Alcohol 95 per cent., and glycerine, each one ounce, ferric chloride, 15 grains, and water, two ounces, make a good spray.

The general treatment demands absolute rest in bed and light purgation followed by stimulation, especially circulatory, to keep up the failing strength. Special attention must be paid to keeping up nutrition. The ingestion of large quantities of physiological salt solution is desirable to help the naturally increased diaphoresis and stimulate diuresis for the purpose of washing out the toxines. Small doses of salol (gr. iii), calomel (gr. $^1/_8$), and sodium carbonate (gr. x), tend to keep the alimentary canal in good order. General anodynes and hypnotics are to be chosen with care to avoid the weakening of the heart's action. Dover's powder or codein seems to be satisfactory. Trional can be used with care.

The pains may be greatly relieved by the application of heat or counter-irritation. The nasal occlusion is best managed with a 2 per cent. cocaine spray followed by adrenal powder and an alkaline aromatic spray. The sinus complications are treated by keeping the nose free by the method already described. If that is not sufficient, the hot nasal douche should be used; taking two quarts of salt solution as hot as can be borne with half an ounce of sodium bicarbonate, and using a fountain syringe at an elevation of six inches, the solution should be allowed to run into one nostril and out the other. After the douche some aromatic spray should be used. The tonsillar condition can be treated by strong applications of silver nitrate up to 15 per cent., or by hydrogen peroxide gargle or spray preceded by a hot water gargling. If there is an accumulation of pus an incision is indicated to evacuate it. W. S. Bryant (Medical Record, January 11, 1908).

INFLUENZA, RENAL COMPLICATIONS OF.

Renal disease as a sequence of influenzal poisoning is considered by the writer to be underestimated. Three forms of renal complications of influenza are distinguished: 1, Cases with acute symptoms of renal involvement; 2, cases in which occurs an aggravation of pre-existing renal disease; 3, postinfluenzal nephritis. Acute nephritis is comparatively infrequent, which fact must be ascribed to the slight virulence

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of the influenza poison to the kidneys. Postinfluenzal nephritis is less of a complication than sequel. The author is of the opinion that the majority of chronic interstitial nephritides not due to constitutional causes are the consequence of an acute infectious disease. In all cases of a long protracted convalescence from influenza, or of bodily decline after this infection, the state of renal efficiency should be ascertained by the phloridzin test. It is shown that of fourteen sets of kidneys tested in this way, only three pairs functioned properly. H. Stern (Medical Record, January 11, 1908).

LARYNGEAL GROWTHS, TREATMENT OF, BY THE GALVANO-CAUTERY.

While the use of the galvano-cautery in the removal of laryngeal growths interferes with the microscopical examination, and necessitates the diagnosis of the tumor being made by the laryngeal examination alone, the advantage of its use in many cases seems marked. Very minute growths can be obliterated; small vascular ones can be removed without the risk of hæmorrhage; the dangers of local reaction are insignificant to those of chronic and lactic acids; the technic is more reliable, more precise, and involves less risk of damage to adjacent structures; the field of operation is always in view, in contrast to the use of forceps where the necessary size of the instrument usually obscures the view; small sessile growths on the mesial surface of the vocal cords can be more thoroughly treated than with forceps; and stumps of growths already removed by other means can be obliterated.

The cautery completely destroys the growth by shutting off the blood supply, and diminishes the liability of infectivity of papillomata. In the treatment of six cases by the galvano-cautery, the local inflammation that followed was not severe, and only very slight œdema occurred in one case. Andrew Wylie (Lancet, November 23, 1907).

LOCOMOTOR ATAXIA.

Locomotor ataxia is essentially a chronic and progressive disease, and from a strictly curative point of view little can be expected. The course is usually very long—twenty or thirty years. Our aim, therefore, should be chiefly to relieve the symptoms and to arrest or retard the degenerative process as far as possible. Syphilis is responsible for most of the cases. Fatigue, excesses, cold, trauma, overstrain, intoxication, etc., are considered to be exciting causes. If syphilis be treated early and thoroughly, the probability of tabes is only lessened, not removed. The earlier the diagnosis, the better the outlook. Cases showing dyspepsia, neuralgia, burning sensations and numbness in the hands or feet, eye and laryngeal symptoms should always be carefully investigated.

A valuable aid in early diagnosis is examination of the cerebrospinal fluid; if there is not excess of lymphocytes present, locomotor ataxia (and also general paralysis) can confidently be excluded. The cases may never advance beyond the preliminary or preataxic stage. Retention and incontinence of urine with cystitis, etc., are common symptoms. Salol and urotropine here give excellent results, and it may also be necessary to wash out the bladder. Dyspnœa or laryngeal crises are, as a rule, not serious and may be relieved by a few whiffs of amyl nitrite or chloroform. Perforating ulcers form on the foot, and are to be treated by prolonged

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rest in bed and antiseptics. Fractures of the bones are caused easily, and unite quickly with a great amount of callus, the condition being akin to the arthropathic changes seen in the joints where there is rapid effusion and abnormal movement (Charcot's joints), the knee being the joint most commonly affected.

Fraenkel's exercises are the best form of treatment for the ataxia, and even the worst cases show improvement. They should be carried out under the eye of the doctor and be persevered with for not less than a month. In certain cases the x-rays applied daily for five minutes to the dorsal region of the spinal column give good results. Baths in general aid the circulation and are refreshing and comforting. Benefit has been noted from the suspension treatment, but it is probably due to suggestion. Bath galvanic and faradic currents have been used, but without any great result. Cold and damp climates aggravate the pains. Potassium iodide and mercury are largely given, but have little influence. Silver nitrate in one quarter grain doses often relieves and lessens the pains and does permanent good. Aluminium chloride, gold chloride, zinc phosphate, and arsenic certainly help in some cases. Strychnine is constantly employed for its tonic effect.[1] Phenacetine and antipyrine are used for the relief of the pains and morphine should be postponed as long as possible. Testicular juice, spinal cord, brain substance, and spermin have been tried, but with very unsatisfactory results. Tabetic patients should not marry. E. A. Dent (British Medical Journal, December 28, 1907).

LOCOMOTOR ATAXIA, THE LARYNX IN.

In spite of the fair number of cases reported in the literature by other investigators, the author was not able to find a single case of laryngeal crisis in the examination of 31 patients suffering from locomotor ataxia. His studies lead him to the following conclusions: The larynx is very seldom seriously affected in locomotor ataxia; early in the disease, but rarely, spasmodic abductor paralysis may sometimes arise, and should suggest to the laryngologist the possibility of tabes as the cause; late in locomotor ataxia one or the other cord (generally the left) is often found in a hyperabducted position. W. B. G. Harland (Journal of the American Medical Association, September 14, 1907).

MENINGITIS, CEREBROSPINAL.

The various forms of meningitis are divided by the author on a bacteriologic basis: 1. Tuberculous; 2, septic (pneumococcus, streptococcus, staphylococcus, etc.); 3, cerebrospinal, epidemic or sporadic, or of the type known under the names of post-basic, simple posterior, basal of infants, chronic basilar, or cervical opisthotonos of infants. His conclusions are formed from 125 cases in most of which the diagnosis was confirmed by the results of lumbar puncture during life or postmortem. Cases developing from influenza or other diseases are omitted. Ear disease is by no means so frequent a cause of meningitis in early life as is commonly supposed. The presence of the pneumococcus in middle-ear discharge does not prove the meningitis to be secondary to the ear trouble; often it arises from the same origin as the meningitis or by extension from it.

It may be concluded that meningitis during the first six months of life is most commonly non-tuberculous; in the second six months it is non-tuberculous in about two-thirds of the cases; and

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after the first year the tubercle bacillus is by far the most common cause. The seasonal incidence of tuberculous meningitis is about the same in all seasons of the year. Pneumococcal meningitis is fairly common in infancy. It is usually secondary to bronchitis and other lung diseases and to acute pneumococcal endocarditis. Streptococcal meningitis is usually due to ear disease or pyæmic affections.

Cerebrospinal meningitis is most common in early life and appears in two distinct forms, the toxæmic and the meningitic. The first is the "spotted fever." The symptoms are those of profound blood poisoning. The meningitic type of the epidemic variety is clinically similar to the ordinary post-basic meningitis in course, complications and sequelæ, and pathologically. The only distinction between them lies in the epidemic character and virulence. There is little proof that the epidemic variety is spread by direct infection. Several members of a household may be attacked, but it is obvious that they are living under similar conditions. The writer describes the three stages respectively of congestion, exudation and effusion, and the symptoms—headache, rigidity of the neck muscles, conjunctivitis, Kernig's sign if the inflammation has spread down the cord, vomiting, the pulse and respiratory and temperature conditions—and states that lumbar puncture may yield evidence of absolute diagnostic certainty. In tuberculous meningitis the cerebrospinal fluid is clear and may contain an excess of lymphocytes and perhaps tubercle bacilli. In cerebrospinal meningitis it is likely to be cloudy and to contain an excess of polymorphonuclear cells and the meningococcus. In the hydrocephalic stage the fluid may be indistinguishable from that of the tuberculous disease.

As to treatment, in the cerebrospinal variety, the nose must be kept disinfected. Serum treatment has proven unsatisfactory. Careful feeding and nursing are essential. Cold to the head and hot baths afford relief from convulsions, extreme opisthotonos and hyperæsthesia. Small doses of coal-tar derivatives and opium are useful, quiet and rest are imperative. The removal of fluid by lumbar puncture is distinctly beneficial when there is intracranial pressure. Vaccine treatment has not been adequately tried. E. Cautley (British Journal of Children's Diseases, November, 1907).

MIDDLE-EAR SUPPURATION.

According to the writer, the most acute suppurations are probably due to preventable causes, such as adenoids or neglected colds. Acute suppurating ears can generally be cured if promptly and energetically treated; cases resulting from grip, diphtheria, measles, and scarlatina are more virulent, but even these will generally respond to treat-

Chronic suppurative otitis media is almost always secondary to the acute condition, and is amenable to antiseptic therapy in most instances; if medical measures fail, surgical intervention will almost certainly save the patient serious complications in after years. Headache, nausea, vertigo, fever, somnolence, tremor, and disturbed vision occurring in one with chronic ear disease are always alarming symptoms, and are usually an urgent demand for surgical relief. W. H. Harrison (Alabama Medical Journal, October, 1907).

MIDDLE EAR SUPPURATION, PATHOLOGY OF.

According to the statement of Pierce, which embodies the idea of many others, the middle ear really begins at the

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pharyngeal end of the eustachian tube, and ends only with the most remote pneumatic cell of the temporal bone. The direct connection of the different channels, which are all lined by similar mucous membrane, makes it possible for micro-organisms to travel throughout their entire extent, and the dependent portions of many of these cellular spaces favor the retention of the secretions, which are produced as the result of microbic action. The bacterial infection is usually a mixed one; seldom is a pure culture of any one organism found. Infection, however, of the middle ear is often prevented by the movement of the cilia of the epithelium, which lines the eustachian tube, toward the pharynx. While numerous predisposing factors of middle ear disease may be set forth, it can also be definitely stated that any condition which produces a lowered state of local resistance, or causes any sudden disturbance of the normal vasomotor balance within the tympanum is apt to lead to a secretory form of inflammation of the mucous membrane. Whatever the morbific excitant may be there is always a local tissue degeneration following the inflammation. Henry O. Reik (Journal of the American Medical Association, August 24, 1907).

NASAL ABNORMALITIES AND TUBERCULOSIS.

The author has reviewed the literature on nontuberculous intranasal and postnasal abnormalities, and their association with tuberculosis. The commonest abnormalities are those simple ones leading to nasal obstruction (such as sæptal deformity, turgescence, and hyperplasia of the nasal mucous membrane) and also atrophic conditions. All writers agree that abnormal intranasal conditions are more common in consumptives than in the nontuberculous. The oral cavity, or an abnormal nasal mucosa, cannot be expected to perform the complex physiological functions required to prepare the air for the lungs. Not one writer doubts but that the intranasal precedes the pulmonary condition. The evidence seems complete that impairment of nasal respiration, more probably, perhaps, than any one of its many sequelæ, is a definite predisposing cause of pulmonary tuberculosis. Most authors pronounce for direct pulmonary infection from inhalation of unfiltered air, so that rhinology should play an important part in the prophylaxis and treatment of consumption. The simple catarrhal laryngitis common in consumptives is dependent on intranasal conditions and not solely due to the exertion of coughing. Rhinological treatment in such cases may be the means of averting tuberculous laryngeal disease. As to prophylaxis, the application to the physically selected classes and to school children is obvious. W. C. Rivers (Lancet, December 28, 1907).

NASAL FOSSÆ, MALIGNANT TUMORS OF THE.

The authors regard the question of transformation of a polyp into a cancer as probable, but "not proven" to date. Empyema in the maxillary sinus masked the presence of cancer in three cases in their experience at Chiari's clinic in Vienna. The rapid growth of a tumor in the septum suggests sarcoma, a slow growth a tuberculous process. Cylindromas are slower in growth than other varieties of malignant tumors, and frequently remain limited to the point of origin, without tendency to metastasis. During the last few years, thirty-two malignant tumors of the internal nose have been observed. One patient has

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had no recurrence to date, eighteen months since removal of a cylindroma; and another, after the same interval since a second operation for the removal of a round-cell sarcoma. Two other patients with sarcoma are still in good health several months since the operation, and two others after the removal of a carcinoma. More than a hundred pages are devoted to this comprehensive study of malignant disease of the internal nose. L. Harmer and E. Glas tion, (Deutsche Zeitschrift f. Chirurgie, August, 1907; Journal of the American Medical Association, October 12, 1907).

NEPHRITIS, TREATMENT OF.

In both parenchymatous and interstitial nephritis the immediate cause is an irritant, and the first duty is to recognize what that irritant is—infectious diseases, over-eating or over-drinking (especially alcohol, tea, coffee), intestinal products, etc. A nicer judgment is often required to treat chronic than acute cases. Basham's mixture is too carelessly administered; the writer gives it now less than he used to. Iron in small doses, with very small doses of bichlorid of mercury freely diluted, is recommended; he also advises purgatives, the iodids as vasodilators and the derivatives of the caffein group. In uræmia venesection with hypodermoclysis, purging and sweating are recommended, and high colonic injection of hot salt solutions administered slowly. In œdema, scarification and Southey's tubes. The author does not think much of nitroglycerin, but thinks it harmless and tending to relieve high tension. In the high tension of granular kidney, however, exceeding 160 milligrams of mercury, it is of signal service; $^1/_{100}$ of a grain is given every two hours until the effect is produced. In low tension digitalis and caffein must be submitted. He accords Edebohls' operation a place in treatment, but does not consider it curative. Insistence on an ophthalmoscopic examination is urged in every case of Bright's disease at least twice a year. In renal headache pilocarpin nitrate or hydrochlorid is advised, beginning with $^1/_{12}$ grain, rapidly increased, to produce an effect on the skin. J. Tyson (Pennsylvania Medical Journal, November, 1907).

NEURASTHENIA, MENTAL ORIGIN OF, AND TREATMENT.

Neurasthenia is considered by the author to be a definite, genuine disease of mental origin and amenable to treatment. Its physical symptoms are without pathologic basis (in any individual case this must, of course, be ascertained by careful physical examination before diagnosing neurasthenia). The symptoms are as real to the patient as though a physical lesion existed. The determining factor calling attention to a definite organ may be a functional derangement, a recognized and dreaded hereditary tendency or an incautious professional suggestion. The mental history must be sought for; with rare exceptions an established nervous temperament has been inherited.

It is unfortunate that there is no word in the language that would be understood by patient, friends and physicians alike, to convey the unequivocal significance of the term "nervous." Insanity will not infrequently be found in the family history. In early life, nothing particularly abnormal may have shown, but there is a tendency to attach undue importance to matters that affect personal feelings. For a time usually the patient struggles against the domination of particular

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ideas or feelings, but later an illness or shock breaks down the remnant of control. Will power is abdicated and the path of least resistance is taken.

The writer holds that overwork, mental strain, the grief of bereavement or alarming shock do not themselves produce neurasthenis, and can not be said to be its cause, though they contribute to its development. The damaging effect of uncontrolled bad habits of thought in early life is emphasized. It is much to be regretted that the terms neurotic, neurasthenic, hysterical and hypochondriacal are, on the lips of the majority of clinical teachers, terms of opprobrium, and this is further emphasized by the entire omission of the subject from ordinary teaching and examination. The writer cautions against giving suggestions to, or hurting the susceptibilities of, nervous patients, for it is impossible to foresee the effect of a careless statement on a none too stable mental organization.

Among the points indicating the neurotic nature of symptoms is a tendency of the patient to refer to them as constant, to describe them in exaggerated terms and as always increasing, and to bring with him to the physician some sympathetic friend who will emphasize his story. In neurasthenia there is an ever-increasing nervousness, a valuable diagnostic point; for it commonly happens that in case of organic lesion, complicated, and it may be masked, by neurasthenic symptoms, the functional aspect becomes less noticeable and the patient acquires increasing control as the serious mischief advances. A judicious and exhaustive physical examination serves the double purpose of setting at rest the question whether or not there is organic disease, and of convincing the patient that the physician fully understands his case.

The personal factor can not be overlooked or depreciated, after a careful and correct diagnosis. Treatment calls for a combination of insight, firmness and sympathy, with courage to speak and act firmly. What is to be treated is not a group of morbid symptoms, but a specific morbid state of mind and nervous system, and the only rational line of treatment consists in an honest and straightforward statement to the patient, dealing with the facts of the case, entering fully into the pathology and passing lightly over symptoms. The power to help and encourage nervous invalids undoubtedly increases with experience and practice. The key to success lies in the proper management of the patient's mental state. The all-important element of the Weir Mitchell treatment is the isolation under the physician's control. The other matters are purely subsidiary. The number of lasting cures obtained in this way year by year strengthens the writer's conviction that the theory is true and practice sound. D. Drummond (British Medical Journal, December 28, 1907).

OSTEOMALACIA AND THE SUPRARENALS.

The writer reviews his theory in regard to the connection between the suprarenals and osteomalacia, and analyzes his experience with 34 patients with osteomalacia and his experiments on animals. In the first place he warns against assuming any special connection between osteomalacia and goiter, as nothing in his experience suggests its probability. He then gives the details of the case of osteomalacia in pregnancy in which the patients recovered under treatment with suprarenal extract. Skiagrams are added showing the in-

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creasing density of the bones of the pelvis after 23 injections of the suprarenal extract in the first case. The second patient, a woman of 39, required 104 injections before similar results were attained. The condition in this case was true osteomalacia marasmus, with very low resisting powers; the pregnancy was at the sixth month. After about 24 injections the treatment had to be suspended each time on account of symptoms of intolerance, a tendency to suffocation, chills, general discomfort and trembling, with a drawing feeling behind the sternum. These phenomena appeared about 20 minutes after the injection and gradually subsided after lasting about half an hour; they grew more severe with the increasing number of injections, so the injections were interrupted and resumed after a few days. The dose of 1 c.c. of 1 to 1,000 adrenalin was given three times a day, and the entire treatment was concluded between January 1 and March 3. The abdominal tension subsided under the injections and increased when they were suspended, giving the impression that the bones of the pelvis softened and sank in when the adrenalin was not being taken, and that they became hard again when it was resumed. This impression is confirmed by the skiagrams taken during the treatment and since. Both these patients had an almost painless delivery at term, but the second one required Cæsarean section before the disproportionately large child could be delivered. In another case the osteomalacia pains recurred seven years after castration and continued for three years, when they vanished under suprarenal treatment. Another patient, a woman of 37, was freed from the disturbances of osteomalacia for four years by castration after her seventh pregnancy. Then pains and disturbances in gait recurred and skiagrams showed the bones of the pelvis to be very porous. Under treatment with suprarenal extract for thirty-three days the disturbances subsided and the general health rapidly improved. Ruffi, Tanturri and Gotelli have reported to the author also a case each of recovery under suprarenal treatment. Skiagrams are given of four sheep before and after one suprarenal had been removed, the bones becoming markedly porous after the operation, with phosphaturia and general signs of osteomalacia.

In conclusion the author calls attention to the difference in the results in the acute and chronic cases, and especially in osteomalacia in the aged. The suprarenal treatment undoubtedly acts by improving the metabolism in general, and in senile osteomalacia the vital processes are at too low an ebb for much to be expected. The results of the experiments on sheep seem to confirm the assumption that the osteomalacia is the outcome of insufficiency of the suprarenals, especially during pregnancy. It is possible that the preparations of suprarenal extract promote the formation of bone by their dissolving properties. If the latter assumption is confirmed it suggests the application of suprarenal treatment in rachitis, especially as a prophylactic measure. The writer has thus treated two little girls and a number of new-born puppies and rabbits, skiagrams in each instance showing increased ossification and more solid ossification than in the controls. M. L. M. Bossi (Archiv für Gynäkologie, Bd. lxxxiii, Nu. 3; Journal of the American Medical Association, January 25, 1908).

OTITIC PHLEBITIS.

The majority of the cases coming under observation are usually secondary to mastoid involvement or have de-

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veloped after a mastoid operation has been performed; the symptoms being more or less constant. The rise of temperature depends upon the amount of septic material entering the circulation. While a fair proportion of these cases have definite chills, which precede the rise in temperature and is usually followed by profuse sweating, the majority of the patients merely encounter a chilly sensation. The pulse rate is increased with the temperature, but when the phlebitis is complicated by a collection of pus in the brain, the rate is much slower. During the existence of hyperpyrexia, the respirations are increased. The pain is usually more severe than in an ordinary case of mastoiditis, is referred to the side of the head and the occipital region, and many times is localized in the region of the torcula. Nausea and vomiting is usually present to a moderate or pronounced degree during some stage of the disease. Eye symptoms are apparent in about one-third of the cases, and when the phlebitis extends to the cavernous sinus, pronounced swelling and puffiness of the eye and lid on the affected side may be noted.

Physical signs may occasionally show œdema in the mastoid region and over and around the exit of the emissary and occipital veins. The advance cases sometimes show impaired cerebration and stiffness of the muscles of the neck on the affected side.

In the operative treatment of these cases, if pus is found in the sinus, the internal jugular vein and any involved tributaries are first resected, the involved glands are excised, and then the sinus is emptied. J. F. McKernon (Journal of the American Medical Association, September 14, 1907).

PHARYNGITIS, PUNCTATE HORNY.

Six cases of pharyngitis are reported distinguished by the development of small, hard, tenaciously adherent, shiny deposits on the mucosa of the pharynx. The infection began insiduously and ran an afebrile, chronic course without signs of local inflammation. The microscope revealed local hyperproduction of the epithelium, with horny degeneration, and almost pure cultures of a peculiar bacillus, which was given the name of Bacillus keratosus. Lemon juice was the only measure which proved effectual in treatment. Siebenman has reported good results from the local application of alcohol. In one of his patients the affection persisted for eight years. W. W. Wyssokowicz (Virchow's Archiv, August, 1907; Journal of the American Medical Association, October 5, 1907).

PLACENTA PRÆVIA.

Among multiparæ placenta prævia can hardly be called a rare complication. In 1,800 cases, of which 87 per cent. were multiparæ and the average number of pregnancies 4 plus, the writer has found the ratio to be 1 to 225. The mortality has been understated recently because of too broad generalization on a few highly favorable case reports. There has been very little reduction in the fœtal death rate, which is still from 40 to 50 per cent.

In the presence of hæmorrhage in the last third of gestation the cervix should immediately be dilated sufficiently to allow of a diagnosis by the finger, and if placenta prævia is present, the uterus should be emptied without delay. Tamponade of the cervix and vagina is useful as a preliminary step. The Braxton-Hicks version is effective in controlling hæmorrhage and is the safest

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procedure for the mother, but it does not give satisfactory results for the child. When the dilatability of the cervix makes it positive that delivery can be effected with little or no tearing of the cervix, rapid delivery by version or forceps may be elected, packing the uterus and vagina if there is bleeding after the third stage.

In cases presenting long, rigid cervices, complete prævia and a viable child. if the surroundings are favorable, Cæsarean section should be chosen in the interests of the child.

The advance in treatment for placenta prævia has been remarkable in reducing the material death rate even though the saving of the patients has not been brought so near to being an exact science as some authors would suggest. It would seem that progress must be directed to decreasing the fœtal mortality. I. L. Hill (Journal of the American Medical Association, January 4, 1908).

POLIOMYELITIS, ACUTE, IN THE ADULT.

Acute or subacute poliomyelitis in young adults is not rare. The real seat of the infection is apt to be obscured by temporary symptoms pointing to the meninges and nerve sheaths. The implication of the meninges is probably independent, not an extension from the substance of the cord. The onset of paralysis is more retarded in adults than in infants, and the extension of paralysis from one group to the other is less immediate. No extension of paralysis is to be expected after fever has subsided. Prolonged rest of the affected muscles is desirable, as well as early orthopædic measures. G. L. Walton (Boston Medical and Surgical Journal, November 28, 1907.)

RHINITIS, HYPERTROPHIC AND INTUMESCENT, THE TREATMENT OF WITH THE GALVANOCAUTERY.

Following the analysis of 100 cases of this condition, the authors have arrived at the following conclusions:—

In the hypertrophic and intumescent rhinitis uncomplicated with deviations or exostoses of the septum, the galvanocautery properly applied is the method par excellence of treatment.

In cases complicated with deviations or exostoses of a slight or moderate degree, the cauterizations of the turbinal bodies will be sufficient to bring about complete relief without the necessity of performing operations on the septum. The dangers of middle ear diseases have been greatly exaggerated, only one case occurring in several thousand cauterizations. The liability to adhesion formation is not great, provided sufficient care is taken not to injure the opposite septal mucous membrane, and provided that when the subsequent swelling is marked, a probe be passed between the opposing surfaces the fourth or fifth day.

Three to six applications of a 4 per cent. solution of cocaine on a cotton-wound flat applicator is sufficient in the great majority of cases to induce complete local anæsthesia. The objection that the galvanocautery destroys too much mucous membrane is not valid if the cauterization is linear and properly done. Scab and crust formation does not occur any oftener than after other nasal operations. No packing is needed to prevent hemorrhage. There is very little, if any, pain after galvanocautery of the turbinated bodies. E. F. Ingals and S. A. Friedberg (Journal of the American Medical Association, August 3, 1907).

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SCARLET FEVER, THE HEART IN.

It is believed by the writer that affections of the heart have not received the attention that an organ so important and, as he thinks, so frequently involved, should. The principal factors of heart complications are the toxæmia of the pyrexial stage and the late toxæmia of nephritis, to which he adds exertion, vomiting, toxæmia of complications, rapidly developed anæmia, and the action of toxins on the cardiac nerve supply. The profession seems to be of the opinion that nephritis is the great factor to be dreaded in the production of heart complications, but the author suggests conversely that the heart is an important factor in the production of nephritis. Many cases of sudden death attributed to œdema of the lungs are considered by the writer to be due to acute dilatation of the heart. An extremely important premonitory symptom is the sudden change from a rather strong, full, regular pulse to one of irregular rhythm and variable or almost imperceptible tension. Other symptoms are discussed in detail and in regard to the prevention of heart complications the author emphasizes the importance of rest in bed, strictly liquid diet, avoidance of antipyretics, using in place thereof the cold sponge, the pack or the evaporation bath, special attention to oral sepsis, skin, bowels and kidneys, and the discontinuance of all medication if vomiting persists. He takes the treatment of heart lesions collectively and in addition to hygiene and general methods speaks well of strychnine, alcoholic stimulants, and camphor. Digitalis should not be used as a rule. Rapidly irregular action calls for the ice bag; the pulse and murmur condition determine the time for getting up. Peptonates of iron and arsenic are recommended for the anæmia. I. H. Eddy (American Journal of Obstetrics, October, 1907).

STOMACH AND INTESTINAL COLIC.

In summing up the points of his paper, the writer states that the physiology of gastric as well as intestinal peristalsis requires a single dilatation of the muscles in the stomach and intestinal coil, followed simultaneously by a single wave-like contraction from above downward toward the anus, and decreasing in contracting force as it progresses. In the colon the peristalsis occurs by the expansion and contraction of the haustra in regular rotation from above downward. Normally, when the gastric and intestinal contents are contracted upon, the contraction is not of the severity to retain the food within the contracted area, as in colic, but allows part of it to regurgitate backward as well as part to be propelled forward into the relaxed areas.

Colic, both gastric and intestinal, is a violation of the rule of contrary innervation, in that the intestine as well as the pyloric sphincter or antrum pylori tonically contracts, while the intestinal coil or gastric muscles immediately above this point at first slowly contract in peristaltic action and then rapidly increase in intensity, until it forces the intestinal or gastric contents against the antagonistically strictured muscle below, with the result that the contracting coil immediately above the stricture must dilate, and that to the extent of the quantity of stomach and intestinal contents forced into it. The severe tension in the muscles of this area is so great that the nerves supplying them, although non-sensitive under ordinary conditions, are now irritated and awaken the symptom of pain.

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Heredity plays a great rôle in the etiology of stomach and intestinal colic. Furthermore, indiscretions in both eating and drinking and climatic changes often cause it; hyperacidity can cause it in those predisposed by heredity or former attacks; constipation is a faithful agent for colic; constitutional poisons, as uric acid, lead, etc., often produce it; disturbances in the general nervous system can underlie it; and, finally, a dislocated kidney or diseases of the gall-bladder, kidney, uterus, and appendix can reflexly be the offending cause.

Sudden attacks of severe pain in either epigastrium or the entire abdomen initiates the condition, which symptom is occasionally followed by nausea alone or associated with vomiting, and by a peristalsis of such a violent nature as not only to be frequently observed when sitting by the side of the uncovered abdomen of the patient, but to be felt by the palpating fingers.

To treat colic properly the accidental causes above stated must be borne in mind and eradicated, especially when caused reflexly by dislocations of, and diseases in, other organs. F. L. Rattermann (Cincinnati Lancet-Clinic, December 21, 1907).

TIC DOULOUREUX, TREATMENT OF.

With the pathology of trigeminal neuralgia still undetermined and gasserectomy expedient only in desperate cases as a last resort, interest has been revived in the intraneural injection of pain-deadening and nerve-destroying substances. Alcohol in strengths of 70, 80, and 90 per cent. in the laboratory and clinical trials appeared to the best advantage in alleviating the pain paroxysms of tic douloureux. The method contemplates reaching the large divisions of the fifth nerve at their basal exists from the skull, the foramina ovale and retundum, and the orbit, and the anatomic relations permit of reaching the nerves at these points by an intra- and extrabuccal route. The original advocates of these respective routes are Schlösser, Ostwalt, Lévy, and Baudouin. A somewhat extensive inquiry into the several methods has led the writer to believe that, all things considered, the extrabuccal method practiced by Lévy and Baudouin is the most feasible. The inferior maxillary nerve is perhaps the easiest of access; the superior maxillary rendered more difficult because of the bony anomalies likely to obstruct the needle; the ophthalmic most difficult because of its divisions and orbital location.

The method requires a syringe with a capacity for 2 cubic centimeters, a needle preferably of special design, a solution of alcohol in ascending strengths of 70, 80, and 90 per cent. admixed with cocaine and a few drops of anæsthetic chloroform. Cadaver operations and clinical experience have led the writer to endorse the method.

The prognosis for cure in a permanent sense from a single injection is not good. The prognosis, in the sense of complete palliation after one or several injections, is excellent, however. Recurrences may be expected in anywhere from six months to one year, but each succeeding relapse is made more mild by the consecutive injections, until ultimately the paroxysms may disappear. The deep alcoholic injections also seem to be indicated for the relief of exceptional and severe forms of neuralgia, affecting nerves other than the bifacial. D'Orsay Hecht (Journal of the the American Medical Association, November 9, 1907).

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URINARY CALCULI, ROENTGEN RAY DIAGNOSIS OF,

The Roentgen ray furnishes the most accurate single means we have for the diagnosis of urinary calculi. It has the advantage over other methods that it not only indicates the presence or absence of calculi, but their size, position and number as well. When a small calculus is shown in the ureter, the size and shape of its shadow will sometimes enable the prediction that it will be passed, and that operation for its removal will be unnecessary. Occasionally, conditions other than lithiasis may be indicated, such as tuberculosis, abscess, and diseases causing a change in the size, position or outline of the kidney, or a fibrous thickening of the lower part of the ureter.

The x-ray is not infallible, and in incompetent hands it may be very misleading, but under the best conditions it is exceedingly accurate. The indications given by it often decide the important question of operation. Such examinations should therefore not be undertaken lightly, nor trusted to careless and incompetent persons, nor to those who have not a proper appreciation of the responsibility involved in deciding a question upon which may depend the health or even the life of a fellow being. E. W. Caldwell (Boston Medical and Surgical Journal, January 23, 1908).

UTERINE FIBROIDS,

In considering the etiology of fibroids, the writer ascribes this condition to irritation of the uterine muscular wall stimulating the growth of muscular fibers that should be stimulated only by pregnancy. He advocates a "knifeless" method of treatment, consisting essentially of nerve sedatives, such as asafœtida, valerian, etc., combined with fluid extract of hydrastis in 10 minim doses before meals. Locally the application of picric acid in glycerin is recommended, 3 grains to the dram, or ichthyol and glycerin. This is placed in the vagina twice weekly by means of a tampon. Uterine douches must be stopped. This constitutional and local treatment should begin at or before the time at which Noble regards the operative treatment as on debatable ground, viz., when the fibroid tumor is subperitoneal. The following rules are given for operating: When the patient has neither the time nor the means to take the knifeless treatment method; if there is severe hæmorrhage or signs of cystic or malignant degeneration; if the patient has tumor cachexia with complications; if the tumor continues to grow after a few months' knifeless treatment; if the tumor is submucous. The writer draws his conclusions from his last fifty cases of fibroid tumors. F. De W. Reese (Medical Record, December 21, 1907).

Book Reviews

Diseases of the Stomach. By Dr. I. Boas, Specialist in Gastro-enteric Diseases in Berlin, Germany. The Sole Authorized English-American Edition from the Latest German Editor. By Albert Bernheim, M.D. (Freiburg, Germany), Assistant to the late Dr. D. D. Stewart at the Philadelphia Polyclinic Hospital and Post-graduate School, as Instructor in the Department of Diseases of the Stomach and Intestines, etc. Appro-

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priately Illustrated with Five Full-page Plates and Sixty-five Engravings in the Text. 730 Royal Octavo Pages. Extra Cloth, $6.00, net; Half-Morocco, $7.50, net. Sold only by Subscription. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

Diseases of the stomach have come to occupy a definite field for specialization. While ordinarily treatises on derangements of digestion usually include those of the whole digestive processes, the present work of Dr. Boas is confined strictly to those of the stomach itself. Several years after his treatise on "Diseases of the Intestines," the first edition appeared in July, 1890, and five have been presented in Germany. Dr. Bernheim, the translator, is trained not only in the school of the author, but a colleague of that brilliant American specialist in digestive disorders, the life-long friend of the reviewer, Dr. David D. Stewart, who fell an untimely victim to appendicitis so recently. That he was a frank admirer of Boas' work, a follower of his teaching, is enough, for one who knows so much less than he, to accept his judgment and appreciate his intention of writing the foreword to this American edition. The book is stated by the author to be less a presentation of the pathology of the stomach than a practical guide in diagnosis and treatment. It is based upon the authors practical courses, and constitutes an epitome of German labors in this field, yet is definitely claimed to "occupy the standpoint of its own acquired by long years of unbiased observation." The evidences of research are plain on nearly every page by exact citations, from chiefly German authorities.

The translator has made a number of additions valuable to the American student, especially of references to the progress of surgery in this country. There are also several excellent x-ray pictures by G. E. Pfahler, and an anatomical plate of the abdominal cavity by Wm. J. Mayo.

Adverting to certain features of the work, take at random the chapter on "Displacement of the Stomach and Neighboring Organs," a subject which occupies much well-deserved attention at the present time. The bibliography is enormous and is sifted in a thorough fashion. The conclusions are wise, conservative, but when definiteness is permissible, emphatic. In treatment too little attention is given to the critical selection of suitable artificial supports and in systematic developmental methods applied to the natural abdominal supports; overmuch reliance made on diet, medication, and even surgical operations. In discussing these last the American surgeons come in for a full share of credit.

The book is masterly, succinct, clear, helpful to general practitioner and specialist alike, and will prove of great practical service, and will shed yet more glory on the author, in which the painstaking and skillful translator deserves full share.—J. W. T.

THE AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. Newman Dorland, M.D., Editor "The American Illustrated Medical Dictionary." Fifth Revised Edition. 32mo of 574 Pages. Flexible Morocco, Gold Edges, $1.00, net. Thumb Indexed, $1.25, net. W. B. Saunders Company, 1907. Philadelphia and London.

This well-tried, little helper is now appearing in its fifth edition, carefully rejuvenated and but little increased in size, being still in reality capable of being put into a fairly capacious pocket. It contains an amazing lot of information for its size. In the preface it is claimed to contain many words of the very latest coinage "not to be found in any similar publication." The "index to tables, including important headings, where large numbers of correlated facts are grouped," is a useful feature.—J. W. T.

THE PANCREAS : ITS SURGERY AND PATHOLOGY. By A. W. Mayo Robson, D.Sc. (Leeds), F.R.C.S.(Eng.), of London, and P. J. Cammidge, M.D. (Eng.), D.P.H.(Camb.), of London. Octavo Volume of 546 Pages, Fully Illustrated. Cloth, $5.00, net; Half-Morocco, $6.50, net. W. B. Saunders Company, 1907. Philadelphia and London.

Owing to the beneficent work of Lister in the establishment of antiseptic surgery, the pancreas is no longer lost in the depths of obscurity, but can now be approached with

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apparent safety and studied in its living state. It has advanced from the position of a mere accessory digestive gland to the rank of an important structure indispensable for the metabolic needs of the organism. Even with the vast amount of work which has been done on this gland in recent years, there still remains much in regard to its diseases which necessitates elucidation.

The book before us, for review, not only contains the extensive and searching investigations of the authors, but also many references to the more important works of others, thereby making this volume almost cyclopædic in character. The text embodies the careful study of the pancreas from almost every point of view. Anatomy, embryology, histology, physiology, and pathology are discussed in turn. The usual consideration is also given to the symptomatology and treatment of the various conditions. Much stress is placed upon the close association of the inflammation of the pancreas with the catarrhal conditions of the upper gastro-intestinal tract. While the pancreatic reaction in the urine has received much attention, and has given certain definite results, it is still a matter open for discussion and further investigation. The reaction is not depended upon alone by the authors, but is taken in association with the clinical symptoms and the chemical analysis of the feces. The early treatment of gall-stones, especially if they are in the common duct, is strongly advocated, because of the close relationship between biliary calculi and pancreatic disease. The illustrations, many of which are original, add greatly to the intelligent understanding of the text.

Following each chapter is a list of the more important references, and at the end of the book is an index of the authors as well as one of the general subject matter.—R. B. S.

Books and Monographs Received

The editor begs to acknowledge, with thanks, the receipt of the following books and monographs:—

"Every Day Diseases of Children and Their Rational Treatment." By Geo. H. Chandler, Chicago, Ills. 1907.——"Manual of Venereal Diseases." By Officers of the Royal Army Medical Corps. 1907.——"Treatment of Fractures: With Notes upon a Few Common Dislocations." New (6th) Edition. By Chas. L. Scudder. 1907.——"Diseases of Children for Nurses." By Robert S. McCombs, Philadelphia. 1907.——"Principles and Practice of Modern Otology." By John F. Barnhill and Ernest de W. Wales. 1907.—"Atlas and Text-Book of Human Anatomy." Vol. III. By J. Sobotta, of Wurzburg. Edited, with additions, by J. Playfair McMurrich, Toronto, Can. 1907.——"Diseases of the Nose and Throat." New (4th) Edition, Enlarged. By D. Braden Kyle, Philadelphia. 1907.——"Cosmetic Surgery: The Correction of Featural Imperfections." By Charles C. Miller. 1907.——"Transactions of the Fifth Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine-Hospital Service," Washington, May 29, 1907.——"Alimentation et Hygiène des Enfants." By J. Comby, Paris, France. 1907.——"Etudes sur la Physio-Pathologie du corps Tyroïde et de l'Hypophyse." By Drs. Léopold-Lévi and de Rothschild, Paris, France. 1907.——"Is the Vital Principle Ponderable?" By Austin O'Malley, Philadelphia. 1907.——"Ready Tables for Modified Milk." By Joseph O'Malley and Austin O'Malley, Philadelphia. 1907.——"Atropia Poisoning." By S. L. Jepson, Wheeling, W. Va. 1907.——"Cystocele." By C. P. Noble, Philadelphia. 1907.——"The Mosetig Batiste." By C. P. Noble. 1907.——"The Abdominal Wound: Its Immediate and After Care." By C. P. Noble. 1907.——"Tuberculosis of the Kidney." By C. P. Noble. 1907.——"Blastomycosis and Its Congeners: Report of Eight Cases Observed by the Writer in Indiana." By A. W. Brayton, Indianapolis, Ind. 1907.——"Syphilis, Past and Present; Its Birth and Origin; Literature, Symptomatology, and Curability; Its Relation to Marriage; Innocent Syphilis and Social Prophylaxis." By Nelson D. Brayton. 1906.——"Vacation Memoirs." By Flavel B. Tiffany. 1907.——"Etiology of Rheumatism; Diet in Rheu-

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matism; Relation of Chorea and Rheumatism, and of Tonsillitis and Rheumatism." By J. E. Winters, New York. 1907.——"The Sleeping Canopy and the Need of Such Means of Ventilation." By Charles Denison, Denver, Colo. 1907.——"The Limit of Proprietorship in Materia Medica. How Far Necessary? How Far Permissible? How Controllable? How Concerned with Fraud." By S. Solis-Cohen, Philadelphia. 1907.——"The Prophylaxis and General Management of Acute Rheumatic Fever." By S. Solis-Cohen, Philadelphia. 1907. ——"The True Rôle of Drugs in the Management of Tuberculosis." By S. Solis-Cohen, Philadelphia. 1901.——"Treatment of Ununited Fractures of the Neck of the Femur by the Use of Coin Silver Nails." By H. Augustus Wilson, Philadelphia. 1908.

The following have been received from the United States Department of Agriculture, Washington, D. C.: "The Mulberry and Other Silkworm Food Plants." By George W. Oliver. 1907.——"The Estimation of Moisture in Creosoted Wood." By A. L. Dean. 1908. ——"Forestry in the Public Schools." By H. A. Winkenwerder. 1907.——"The Culture and Uses of Brome-Grass." By R. A. Oakley. 1907.——"The Seasoning and Preservative Treatment of Arborvitæ Poles." By C. Stowell Smith. 1908.——"The Lumber Cut of the United States: 1906." 1907.——"The Seasoning and Preservative Treatment of Hemlock and Tamarack Cross-Ties." By W. F. Sherfesee. 1908.——"Progress in Legume Inoculation." By K. D. Kellerman and T. R. Robinson. 1908.——"Production of Veneer in 1906." 1908.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

NEURASTHENIA—ITS ETIOLOGY AND TREATMENT.

BY GUTHRIE RANKIN, M.D., Glas.; F.R.C.P., Edin.; M.R.C.P., Lond.,

Physician to the Dreadnought Hospital and to the Royal Waterloo Hospital for Children and Women, London.

IN 1879 Beard, of New York, published a book, entitled "The Nature and Diagnosis of Neurasthenia," which contained a graphic description of a varied and often ill-defined group of symptoms, familiar in a general way to the medical world, but hitherto unraveled as a distinctive disorder and therefore unlabeled with a name. The leading characteristic of the malady is, as we all now recognize, a more or less pronounced disability for sustained work, whether mental or physical, with an amount of fatigue following upon effort out of all proportion to the energy expended. Eventually the nutritional activity of the body comes under the influence of this enervating process and manifestations of constitutional break-down declare themselves.

Another important feature which runs through every variety of the disease and links together the bewildering multitude of neurasthenic manifestations, is a form of mental instability which is closely allied in some instances to hysteria, and in others to hypochondriasis.

The invariable presence of this mental unrest has been specially emphasized by French observers and, in their experience, it enters so prominently into the symptomatology not only of neurasthenia, but of all the neuroses, that Contet has advocated the adoption of the name of Psychasthenia as a generic title under which all of them might be grouped. Following along similar lines of thought and experience, Dr. David Drummond, of Newcastle,

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in a lecture recently delivered in London, has stated that "Neurasthenia is essentially a disorder of the mind, and that it can only be treated successfully when this fact has been recognized."

Though various theories have been propounded, we have, as yet, no accurate knowledge of the morbid conditions underlying the disease.

Neurasthenia is never directly responsible for death, and in the case of persons who have died from some intercurrent disorder while in a neurasthenic condition, no organic changes have been found subsequently to which this curiously exhausted and aberrant state of the nervous system can be ascribed. It is therefore still regarded as a functional disorder, but the symptoms are too persistent and repeat themselves too true to type to justify the belief that they are the outcome of a mere chance derangement of function; it seems much more likely that they depend, as has been suggested by Gowers, "upon changes in the finer nutrition of the nerve-elements, too slight to be detected by the microscope, but causing a corresponding and persistent alteration of function."

The causes upon which neurasthenia depends are varied and often obscure, but though it is not contended that the greater pace at which the world moves is the sole explanation, the increasing wear and tear of living and of earning a livelihood probably plays the most important part in the etiology. Doubtless the group of symptoms which is now associated with the name neurasthenia existed in the remote ages, but it seems unlikely that the condition can have been of anything like the present-day prevalence, else it would not have so entirely escaped attention and description by the physicians of those times, many of whom possessed a clinical instinct that could not have failed to become arrested by a continual repetition of cases with general features sufficiently distinctive to separate them from mental disorder on the one hand, and from physical disease on the other. And even coming down to recent times, it will be admitted by most observers that, in their individual experiences, the number of patients whom they are driven to classify as neurasthenic, is infinitely greater than some years ago; that it is becoming, indeed, so prevalent as to justify the designation sometimes accorded to it of being "the disease of the century"; and, most noteworthy fact of all, that its victims are to be found in far greater abundance among the restless inhabitants of busy communities and in large centers of industry, where competition and ambition impose upon individuals a constant strain on body and brain often beyond their strength, than in country districts where life is passed under conditions of uneventful monotony and of prosaic, unexciting occupation and duty. Cases are met with in rural as well as in urban districts, but the one

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bear a small proportion to the other and are more frequently found to be associated with a direct explanatory cause such as accident, adversity, shock, or prolonged stress of mind or body. The dweller in town, on the other hand, though liable to fall a victim to the disease from the same exciting causes as his country neighbor, frequently develops all its classical symptoms without any extraneous or unusual occurrence in his life or circumstances to account for it. He has been living at high pressure all the time, spending every day twenty-five shillings in the pound of strength and energy, and unremittingly overtaxing his reserve of vitality until his resistance breaks down and a condition of physical and mental collapse is the price Nature, in her revengeful mood, calls upon him to pay for the lack of due obedience to her imperative law that rest as well as work is necessary for the maintenance of the *mens sana in corpore sano*. But though the neurasthenic has, in most instances, to thank a badly balanced life for the onset of his unhappy illness, the fault does not always lie at his own door. The original capital of nervous force with which we are congenitally endowed is not the same for each individual. One man is descended from ancestors who have been proverbially healthy, and most of whom have attained, through many generations, long lives; another is the inheritor of a nerve instability which has manifested itself either in his immediate or remote progenitors in various forms of mental trouble or nervous disorder. Again, one man is the offspring of a family conspicuous for habits of moderation and frugality, and with a record of simple duty conscientiously and virtuously followed; another brings into the world with him a load of original sin accumulated through generations of forbears who have worshipped at the shrines of Bacchus and Venus. Obviously the latter individual is seriously handicapped and is more likely than the former to break down under the stress of work and worry. So long as his life is fairly successful and not overburdened with cares and anxieties, he struggles on—though often from hand to mouth—so far as his stamina is concerned, but whenever the strain becomes accentuated by the pressure of additional demand for energy, he fails to respond successfully. He becomes restless, introspective, unfit for mental concentration, depressed, and irritable; his sleep at night is broken and unrefreshing, his appetite is fickle and poor, his digestion is disturbed, and his bowels are irregular. These and other well-known manifestations with which we are all familiar, should warn him that he has reached the end of his tether. If he fails to give them heed and to adopt the proper means for their counteraction, they will inevitably, and before very long, cast him into the throes of a complete nervous break-down.

The invasion of neurasthenia is not always a gradual process. The

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symptoms may develop after an undue continuance of mental, physical, or emotional strain as suddenly as after the jarring of the nervous system produced by a railway or other serious accident. Such a sudden form of onset is more frequently met with in young women than in men, but it is a constant, though unhappily often unappreciated, danger to men and women alike if they allow either work or habits to become so engrossing that the reserve of energy with which their nervous centers are endowed is persistently overtaxed. It is difficult to convince the public that "prevention is better than cure," and it is too much the custom to put off seeking advice for symptoms that, though troublesome and vexatious, are indefinite and apparently attributable to some temporary and unimportant disturbance of the general health which that fail-me-never, an antibilious pill, will rapidly set right. But it is too often the case that the neglect of these early admonitions—when a short period of suitable treatment combined with rest and change would probably restore energy and rehabilitate the nervous system—permits the debilitating processes to make headway until the sufferer collapses and finds himself unequal to face the daily task and unfit to cope with the multifarious duties of the ordinary routine of life.

Neurasthenia is such a complex disorder that it is impossible to define sharply the etiological conditions which are predisponent from those which are excitant. It is probable that several causes are conjointly responsible for most cases, and that according to circumstances one cause or another which predisposes in one individual to an attack of the disease may in another actually determine its incidence. Thus, for instance, an attack of influenza is frequently the first departure from health which, by depressing the vitality of the patient, paves the way for subsequent neurasthenic troubles; but when its victim is already in infirm health, the influenzal seizure may act like a match to a train of gunpowder and immediately light up latent neurasthenic manifestations.

There are certain facts which, from the etiological point of view, should be borne in mind when investigating a suspected case. It occurs most frequently in the middle decades of life; it is somewhat more common in males than in females; it is comparatively rare among the working classes of society, but in the middle and upper classes it is met with in two distinctive and opposite types of the community:—

(a) In those whose lives are passed in the midst of sustained intellectual effort or of constant emotional strain, and

(b) In those whose tastes and circumstances induce habits of luxurious idleness and of discontented ease.

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It is more likely to develop in those who possess a neuropathic heredity than in others; it is often provoked by such intercurrent events in life as persistent worry, prolonged overwork, poignant grief, financial disaster, deficient sleep, blighted affection, severe and continued pain, and the prolonged abuse of alcohol, tobacco, or toxic drugs; it may arise as a sequel to any acute illness, and is particularly liable to be associated with influenza; it is very frequently an accompaniment of such disorders as exophthalmic goitre, or rheumatoid arthritis, and of such normal events as puberty and the menopause, in all of which there is marked vasomotor instability; and, finally, the foundations of the disorder may be laid by an unwise system of education involving over-pressure in youth and in early adult life. No reference is made to traumatism as a contributory cause, because traumatic neurasthenia is a condition *per se*, of an acute and definite type, and always accounted for by the shock of a railway or other accident.

In the course of a single lecture it would be impossible to review the various theories which have been advanced to account for the occurrence of neurasthenia, and since many of the cases with which we are called upon to deal apparently depend for their origin on more than one cause, no one hypothesis will be found sufficiently comprehensive to embrace all varieties of the disorder. There is, however, one striking fact about the disease which increasing experience forces home more and more vividly on the minds of those who have much to do with its management, namely: the very large proportion of cases in which gastric disturbance forms an important and often prominent feature of the illness. It may be contended that these gastric phenomena are merely part of the general neurasthenic condition and are to be explained by mere tonelessness of the stomach-wall and debility of the secretory functions of the digestive apparatus; but it will be found, if close inquiry be made, that in the large majority of instances the dyspeptic symptoms have been a source of trouble for months or even years before distinctive evidences of nervous instability have become declared, and further, it is noteworthy that *pari passu* with an improved state of the digestion there arises an amelioration of the neurasthenic miseries. It has occurred again and again, in my own experience, to follow closely the progress of events, and I have constantly observed improvement ensue upon the establishment of healthy digestion and normal assimilation, with relapse in regard to the nervous manifestations soon after any recurrence of the dyspeptic discomforts. On referring to my note-book I find that of the last 50 cases of neurasthenia treated in private practice, no fewer than 38 recorded a previous history of disturbed digestion. This corresponds closely with the returns published by Savill, who, on careful

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analysis of 83 private cases, found 71.2 per cent. were sequential to gastric disturbance, and 12 per cent. to other toxic conditions.

Bouchard has attributed the disease to abnormal fermentations in a stomach which, in consequence of hereditary or congenital weakness of its muscular walls, contracts insufficiently in the intervals between different periods of digestion. He believes that, from this cause, soluble toxins are produced which, when reabsorbed, impair in varying degrees the several tissues of the body. This theory would attribute the vitiation of nutrition primarily to dilatation of the stomach, but though some cases may be so explained, it is certain that in the majority the dilated stomach is a secondary and not a primary event. The etiology of the disease is, it will thus be seen, still imperfectly understood, and it seems unwarrantable to refer dogmatically to any cause as being the one and only responsible factor in causation. Enough has been said, however, to justify the proposition that, in a preponderance of cases, the gastro-intestinal tract plays an important rôle in the symptomatology and, for my own part, my personal observation inclines me strongly to adopt the view that imperfections of digestion are in the main at the root of the evil, and that these are accountable for the creation of a toxæmia which produces nutritional changes throughout the body, but which manifests a selective preference for the anatomical elements of the nervous system, acting with special activity on those persons whose heredity proclaims their nervous tissues to be built presumably out of poor material.

I may further remind you that constipation and anæmia are usual conditions in neurasthenia, and most of us will agree with the late Sir Andrew Clark that an auto-intoxication from a loaded intestine is largely responsible for the depraved blood-conditions with which it so frequently becomes associated.

Even if such a conception is theoretical, there is much evidence, both direct and indirect, to support it, and it possesses at least the virtue of furnishing us with a working basis upon which to found a reasonable system of management.

It is not the object of this paper to discuss the multifarious symptoms of this widely prevalent disorder, but I may be allowed to refresh your memories by recounting the following epitome which, though incomplete, indicates clearly that the symptom-complex is sufficiently widespread to admit only of a central or constitutional cause as its explanation:—

Constant sense of weariedness, mental and physical, intensified by the least exertion.

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Impaired digestion: anorexia, eructations, flatulent distension, borborygmi, spasm of the colon, constipation.

Change of temperament: fickleness, restlessness, irritability, introspection.

Headache: occipital or vertical—made worse by stooping or effort.

Unrefreshing sleep; unpleasant dreams.

Sensory and motor disturbances: neuralgic pains, muscular tremors, active deep reflexes, paræsthesia.

Vasomotor phenomena: flushings, sweatings, palpitations, vertigo.

Impairment of special senses: photophobia, tinnitus aurium, subjective sensations of taste and smell.

Intellectual phenomena: mental depression, loss of memory, feebleness of volition, vacillation of purpose, loss of self-confidence.

Emaciation; cardiac irritability; anæmia; paroxysmal polyuria.

In many instances floating kidney, enteroptosis.

Absence of organic physical signs.

In the matter of treatment, the first and obvious indication is rest, which must be both mental and physical. Its salutary effect is intensified by the influence upon the patient of his physician and of his surroundings. The enfeebled moral personality of the neurasthenic individual is keenly susceptible to suggestion, and, if the conditions of environment are made favorable, the physician has great opportunities for restoring his patient's lost courage by a cheerful demeanor, by gradually obliterating from his mental horizon the gloomy forebodings and hypochondriacal obsessions which loom upon it so large and so constantly, and by the adoption of suitable hygienic and therapeutic measures so carried out as to impress him with the feeling that a definite and hopeful plan of well-considered and carefully thought-out action is being adopted for the relief of his individual miseries; that he, the sick man, and not his disease, is the object of his physician's solicitous care and attention. In many instances the requisite amount of rest may be got by a sea voyage, a trip abroad, or a change of scene and surroundings nearer home, but no routine method is applicable to all cases. It must not be forgotten that rest is a therapeutic agent which is capable of much harm as well as of great good, and it is essential that it should be administered after such a fashion as will excite the fullest response on the part of the individual for whom it is ordered. It may be accepted as a foundational necessity that, however applied, the rest must be carried out away from the influence and

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associations of the home surroundings. The patient must be temporarily separated from his relatives and domicile, and from the worries and demands of his usual pursuits. Where there is total incapacity for both work and recreation, a course of complete rest and isolation in a nursing home will often yield the best results, but it cannot be too strongly stated that the present-day tendency to regard every neurasthenic patient as a fit and proper person for whom to prescribe a course of rigorous treatment according to the Weir-Mitchell method, is a serious error and one which is often attended with disappointing results. For a disorder so protean in its manifestations there can be no one plan of cure universally and unalterably applicable.

The class of patient for whom Weir-Mitchell treatment is pre-eminently indicated is the person whose symptoms are bordering on hysteria; whose restlessness and self-absorption have made him unfit to take his part normally either in his home life or in his business relationships; whose appetite has become seriously impaired, and whose weight has, in consequence, fallen far below the physiological standard of health. In every instance the form in which rest may be best administered must be determined by the individuality of the sick man, his personal tastes, the limits of his business or professional obligations, and the elasticity of his financial resources. Restoration to health will only be accomplished by careful correction of existing physical disturbances; by re-education of the various organs to a normal performance of their functions; by the moral influence of a sanguine and cheery optimism; and by provision for the future conduct of life with a due regard to regulation of habits, so that bodily demand may be suitably proportioned to vital supply.

In cases that have gone so far that the patient is not energetic enough to face the fatigue of travel, and which are yet not so aggravated as to necessitate complete isolation and over-feeding, a modified form of the Weir-Mitchell plan of management will usually steady down the nervous system and re-establish the functional activities of the body so as to permit of an ocean voyage or some other form of agreeable and easy holiday being undertaken as an after-cure with a fair prospect of an ultimate successful issue. Such a course of treatment should be undertaken in a nursing home or in comfortable lodgings under the constant care of a judicious and capable nurse. All intercourse with relatives and all participation in the business or professional concerns of life must be for a time abandoned. The food must be generous but should be regulated, both as to quantity and quality, according to the digestive capacity. Into the dietary milk and fats ought to enter abundantly. A discipline of regularity in regard to meals, hours of resting, amount of sleep, and other details of the daily routine should be established

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from the beginning. For the first ten days or fortnight absolute rest in bed should be enforced, but thereafter a daily drive, soon to be replaced by walking exercise in moderation during the afternoon, is desirable. After the first week the patient may have one welcome visitor—other than a near relative—at a suitable time each day. He should be encouraged to read newspapers, magazines, and light literature, and to occupy a set time each afternoon or evening in the pursuit of an artistic hobby or in playful pastime. Thus will the tedium of his invalid life be relieved and the opportunities for introspective reflections diminished. Massage must be provided night and morning for the improvement of his muscular system, and the application of a faradic current once a day is a useful addendum to the rubbing, and is a salutary remedy from the point of view of suggestion.

Not the least important item in the program is the daily visit of the doctor. It is looked forward to by the patient for confirmation of his hope that he is responding satisfactorily to the means that are being adopted for his cure; it is the event upon which he unconsciously depends for reassurance, and from which he derives gradually, and day by day, courage and confidence. No small measure of the success which is achieved is due to the personality of the doctor in attendance; if he is to inspire hope and confidence, he must be himself sanguine and self-reliant. His visit must be no mere perfunctory performance of a routine duty, but must involve a concentrated and wholehearted effort to give forth from himself an element of that essence of life which encourages hope and stimulates the wearied and played-out organic and intellectual centers of his disconsolate patient to rouse themselves to the effort that is necessary for the restoration of their spent but not lost energies. He must be a master of the art of what Déjérine has called "persuasion"; an art which consists in conveying to the patient such a rational understanding of his condition and of the means by which it may be improved that his intelligent and hearty co-operation is enlisted, and the exercise of his own will in the accomplishment of his cure brought into play.

Though drugs play a secondary part in the treatment of neurasthenia, they are serviceable allies, and in no case can they be wholly discarded. It is becoming fashionable with some members of our profession to belittle the value of drugs in disease, and to look upon their disregard as an evidence of superiority in skillful treatment. And it is in cases of neurasthenia that men holding such opinions find the most fruitful field for the apparent verification of their heterodox views, because, as we all know, the victims of the disorder are ever ready to drench themselves with all sorts of pharmaceutical preparations and quack remedies in their vain efforts to get rid of their miseries by the simple

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expedient of swallowing a dose of something or other which one sympathizing friend after another has assured them has been, in his own case, of miraculous virtue, or which the blatant advertisements of the patent medicine vendor has tempted them to believe is the panacea for their discomforts. But surely those who attempt to cure disease without drugs are setting aside the most powerful weapons with which we are provided to conquer it! The sick public, and especially that section which is sick from neurasthenia, will not readily be convinced that without drugs they can be made whole, nor have they, as a class, reached that stage of enlightened and blind confidence which is willing to accept negative expectancy as a satisfactory way out of their physical and mental tribulations. They demand insistently that their treatment shall be energetic and positive; that tangible measures shall be adopted for the relief of their symptoms from which definite results may be expected; and they look to medicinal preparations as an essential element in any scheme of treatment recommended for their cure. None of us will, I am sure, advocate the excessive or indiscriminate use of these valuable agents, but equally, am I convinced, that the spirit of contemptuous disbelief in their efficacy is an affectation which should be discouraged and against which, those of us who wish to do our best for our clients, should guard against.

It has been pointed out that digestive troubles are almost inseparable from the neurasthenic condition. These are very frequently associated with an unhygienic state of the buccal cavity, and it is important, as an early step in treatment, to have the teeth inspected and any evidence of decay corrected by the dentist. It is a safe precaution always to insist upon the use twice daily of an antiseptic mouth-wash. Forty grains of chlorate of potash in eight ounces of a one in sixty solution of carbolic acid will be found a pleasant and efficacious solution with which to brush the teeth and wash out the mouth and throat. Again, it is the rule, rather than the exception, to find that the bowels are constipated. Means must be adopted to ensure their daily and complete evacuation. For this purpose there is no more satisfactory remedy than the compound rhubarb powder of the *British Pharmacopœia,* given in a cachet containing 20 or 30 grains, after dinner. On first waking in the morning, when the stomach is empty, eight ounces of hot water should be sipped leisurely, and to this may be added, when the over-night dose of rhubarb does not promise to be effective, one to two teaspoonfuls of Carlsbad salt. One grain of calomel should be taken with the compound rhubarb powder periodically—say, about once in a week or ten days. For the correction of errors of digestion I am strongly impressed, as the result of considerable experience, with the value of antiseptics, and the success which has followed their exhi-

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bition constitutes, to my mind, one of the strong arguments in favor of the intestinal toxæmic theory of the etiology of the disease. I have made trial of most of the antiseptics which are in common use, and I find that those which are most generally efficient are carbolic acid and sulphocarbolate of soda. The former, in doses of 2 or 3 grains, combined with acids, and the latter, in doses of 10 to 15 grains, with alkalies, should be given according to the indications of the case. The following formulæ may be found useful:—

(a) Dilute hydrochloric acid, 15 minims; pure carbolic acid, 2 grains; solution of strychnine, 5 minims; tincture of ginger, 20 minims; chloroform water to one ounce. To be taken three times a day an hour after the principal meals.

(b) Bicarbonate of soda, 15 grains; sulphocarbolate of soda, 10 grains; tincture of nux vomica, 10 minims; taraxacum juice, half a drachm; peppermint water to one ounce. To be taken three times a day before meals.

Another drug which I have found of valuable service in cases where the digestive processes are slow and where the response to the foregoing prescriptions is disappointing, is papain. It may be added to either of the above mixtures, or it may be given conveniently in the form of a capsule according to this formula:—

Papin (Finkler), 3 grains; pure carbolic acid, 2 grains; strychnine, $^1/_{30}$th of a grain; extract of gentian, 2 grains. To be taken three times a day after the principal meals.

At first the diet must be simple and should consist of milk-foods, clear soups, white fish, fowl, and game; but as soon as possible varied meals should be taken as in health, keeping in view the desirability of making them, for the time being, superabundant to the point of toleration. In every case the following details should be observed: Red meat once a day only; cocoa, café-au-lait or boiled milk, rather than tea; sugar in moderation; no uncooked vegetables; an abundance of fats; a minimum of two pints of milk in each twenty-four hours. When the patient is within reach of a fresh supply, a pint of buttermilk may, with advantage, be substituted for an equal quantity of the daily allowance of fresh milk. The food must be thoroughly masticated, and liquids should be taken at the end, rather than throughout, the meal. When the patient's digestion is sufficiently improved, a single dose of half an ounce of codliver oil, given the last thing at night, affords a valuable addition to the fats consumed otherwise, and also promotes the activity of the bowels. Its assimilation is assisted by gradual administration, beginning with a few drops and doubling the dose each night until the maximum is reached.

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The best medium for its exhibition is orange or ginger wine. Alcohol must always be used sparingly, and in many cases is best done without. Sometimes one glass of burgundy or claret, or one tumblerful of well matured stout, with luncheon, is a helpful addition to that meal, but the patients for whom it is desirable or to whom it is suitable must be carefully selected.

When sleeplessness is a prominent symptom, it is often necessary for a few nights at the beginning of a course of treatment, to order a sedative. Chloralamide, trional, or sulphonal are the safest and, as a rule, the most successful hypnotics; either may be given in one dose of from 15 to 20 grains. When they fail the desired result is often achieved by veronal in one dose of from 7 to 10 grains, or by chloralose in a dose of 4 grains, repeated after two hours if necessary. But, in extreme cases, all hypnotics may fail, and it is then justifiable to have recourse to morphia, which should be given hypodermically in a dose of one-quarter of a grain, combined with one-hundredth of a grain of atropia. If the administration is restricted to two or three injections on successive nights, sleep will probably be re-established. The risk of creating an unconquerable habit is inconsiderable, and may be disregarded if care is taken to restrict its use and to resort to it only under the stress of necessity. The immense gain to a wearied nervous system of a few nights' sound sleep and the confidence which such an experience creates in the success of the course of treatment which is being entered upon, amply repays any disadvantages that may be urged against the exhibition of narcotics. They must be used discriminately, but should not be condemned uncompromisingly, as is sometimes done.

In all neurasthenic cases the stomach walls are flabby, with a certain amount of atonic dilatation as a consequence. As a rule this rapidly passes off under the influence of rest and suitable food, but every now and again dilatation is met with in a pronounced form and demands a short course of lavage as an initial step in treatment. Such a stomach should be washed out every morning for a few days with a warm solution of bicarbonate of soda—one dram to the pint. The mucous lining is thus thoroughly cleaned, and its normal secretion stimulated to healthy activity. Food being, at the same time, sparingly administered in easily assimilable and concentrated form, the risk of its long delay in the stomach is avoided, and the muscular wall given full opportunity to regain some degree of energy.

In many cases vasomotor instability and anæmia are persistent and prominent features, which remain a source of discomfort after the digestion has become normal and vigorous. Under these circumstances the following formula may be tried:—

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Valerianate of iron, 4 grains; ichthyol, 5 grains; arsenious acid, $^1/_{40}$th of a grain; extract of cannabis Indica, $^1/_8$d of a grain. To be put into a capsule and taken three times a day after meals.

The iron and arsenic improve the blood condition; the ichthyol acts as an intestinal antiseptic and exerts a valuable steadying effect upon the vasomotor system, and the cannabis Indica soothes the nervous system and promotes appetite.

Headaches sometimes occur with such severity as to demand special attention. They are generally relieved by temporarily intermitting the routine of treatment; keeping the patient for a day in bed; restricting his food to the smallest dimensions, and administering one or other of the numerous analgesics so much in vogue. A combination which is often successful is one of 3 grains of antifebrin, 10 grains of aspirin, and 2 grains of caffeine, given every two hours for one, two, or three doses, according to requirements.

Spinal tenderness is another symptom which may be troublesome and rebellious, but which, if milder measures fail, usually yields to the light application of a Paquelin cautery at points down the length of the vertebral column.

A loose kidney—most frequently the right one—is an almost constant accompaniment of advanced neurasthenic conditions. Before the patient begins to walk much about, it is well to provide against the risk of dragging discomfort by having the kidney supported either by a crutch or by corsets so constructed as to exert pressure from the lower part of the abdomen upward, thus giving support to the whole contents of the abdomen.

Once well, the patient should concern himself to regulate his habits of life so as to minimize the danger of a recurrence of his ailment. He should arrange his work after such a method that he escapes undue fatigue or prolonged strain; he must have long nights in bed; he should practice regularity in regard to meals and exercise; he must maintain a prudent control over alcohol and tobacco, and avoid indigestible food; he will derive advantage from a Turkish bath, indulged in once a week, and he should take at frequent intervals a short but complete respite from the routine of his daily life. If he is wise, he will cultivate a hobby, and especially one in the indulgence of which he will be compelled to pass a certain amount of time in the open air. The slightest ailments should be regarded seriously and dealt with promptly.

Children born of neuropathic parents should be guarded against the risks of their heredity, and special attention should be given, in their upbringing, to preserve the integrity of their nervous systems. They should live in the country or at the seaside; their education ought to be carefully adjusted to

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their mental powers, so that all danger of overpressure is avoided; they should be encouraged to indulge to the limit of their physical capacity in out-door games and healthful exercises, and they should be trained judiciously in habits of moderation, obedience, and self-control.

THE CUTANEOUS MANIFESTATIONS OBSERVED IN RHEUMATISM IN CHILDREN.

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It will be noted that I have somewhat altered the wording of the topic assigned to me in this symposium on rheumatism in children. I prefer to discuss the cutaneous manifestations observed *in* rheumatism rather than the cutaneous manifestations *of* rheumatism. It has not been definitely proven that acute rheumatic fever is a disease due to a single specific bacterial agency. If subsequent research supports the specificity of the "diplo-streptococcus rheumaticus," then it will become necessary to recognize certain rheumatoid states presenting a strong clinical resemblance to rheumatism, and differing only in minor bedside phenomena and in the character of the bacterial cause.

Certain it is that the most conspicuous symptom of articular rheumatism, namely, polyarthritis or polysynovitis, may be produced by a variety of micrococci, of which the most common, apart from the organism of Poynton and Payne, are the streptococcus, the staphylococcus, the meningococcus, etc.

A polysynovitis may also be produced by non-bacterial agencies. This is particularly seen in the symptoms often observed after the use of a heterogeneous or alien blood-serum. I have for some years been specially interested in the phenomena commonly noted after the injection of diphtheria antitoxin and other sera. Fever, joint pains, articular swelling, and an eruption are the manifestations at times observed. These symptoms are due to certain undetermined albuminous constituents of the blood-serum, and not to the antitoxic principle.

I have recently had the opportunity of studying marked serum phenomena following the use of antipneumococcic serum. Seven days after the administration the patient developed an induration at the site of the injection, enlargement of the neighboring lymphatic glands, a temperature of 102° F., an universal urticaria and erythema, pain and swelling of the wrists, fingers,

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knees and ankles, and sweats. The urine was loaded with amorphous urates. Certainly this is a picture bearing a strong resemblance to true rheumatism, yet it was caused by the injection of an alien blood-serum.

The Clinical Society of London has reported arthropathies forty times among 663 cases of diphtheria; in 35 of these cases the joint symptoms were accompanied by an antitoxin eruption.

The mere enumeration of the eruptions that have been observed in rheumatism would be of little value without some comment upon their significance in this disease. There is no cutaneous manifestation constantly seen in the course of rheumatic fever, nor does there appear any exanthem which may not be encountered in other infectious processes.

The eruptions most frequently observed are exudative erythema multiforme, usually of the gyrate or papular form; erythema nodosum, scarlatiniform erythema, urticaria, and forms of purpura. These eruptive manifestations all belong to the so-called "erythema group of skin diseases."

This group of eruptions may be called into existence by a variety of causes: bacterial and protozoal toxins, ptomaines, leucomaines and other metabolic poisons, and drugs. In the last analysis it would appear that the cause is a chemical poison in the circulating fluids of the body. Any one of these eruptive phenomena, save possibly erythema nodosum, may be produced by the albuminous constituents of a heterogeneous blood-serum. Urticaria, erythema multiforme, erythema scarlatiniforme, erythema morbilliforme, and purpura have all been observed after antitoxin administration. Most, if not all, of these rashes may be encountered in the various infectious diseases: in typhoid fever, small-pox, scarlet fever, measles, typhus fever, septicæmia, malaria, etc.

All of the erythema group of skin diseases may occur in dispensary patients and without pronounced evidence of systemic disturbance. There is an intimate relationship between the various members of the erythema family. Urticaria and erythema commonly merge into each other, and any erythema may become purpuric from a more intense action of the causal poison.

The literature upon the eruptive manifestations seen in rheumatism is rather scanty.

Herpes simplex appears to be uncommon, having been observed by McCrae but six times among 270 cases in Osler's service. Most writers do not particularly comment upon its occurrence in rheumatism.

As would be expected in a disease accompanied by copious sweating, *sudaminous vesicles* are frequently seen, as is also *miliaria*, an inflammatory sweat eruption.

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Church and Cheadle remark that the sudamina in rheumatism "go through changes rarely, if ever, seen in other conditions. The vesicles, at first clear, and, in fact, only visible in certain lights, become much more perceptible, their contents becoming milky and opaque and their bases surrounded by a minute ring of redness." The sudaminous vesicles are believed, in other words, to terminate in miliaria rubra. The contents of the vesicles, in the clear stage, are acid, but after becoming milky, the reaction is usually neutral or slightly alkaline.

Various forms of *erythema* are occasionally observed in rheumatism. The erythema in children usually takes the form of a marginate or papular erythema. In the former variety the eruption appears as rings, which gradually coalesce and produce gyrate or map-like configurations. The color is pinkish-red at first, but later acquires a duller red tint. A considerable portion of the trunk and extremities may be occupied by the eruption. I recall a case of endocarditis and multiple arthritis following scarlet fever, in which there appeared an extensive eruption of this character; with each access of cardiac or arthritic trouble a new outbreak occurred, the eruption each time lasting a week or more.

The papular form of erythema is apt to develop symmetrically upon the extensor surfaces of the extremities.

At times a *scarlatiniform erythema* is encountered during a rheumatic attack. Poynton saw a general erythema of the scarlatiniform type, lacking, however, the punctiform character. Hallopeau and Roger have each recorded an instance of a scarlatiniform eruption in rheumatism.

Among 270 cases of acute articular rheumatism, McCrae found 8 instances of erythema of different types.

Urticaria occurs rather uncommonly in the course of rheumatism, although it is mentioned by various writers. Its infrequency may be appreciated by the incidence in McCrae's report: there were but 2 cases among 270 cases of rheumatism.

Strümpell states that he has seen several cases of *hæmorrhagic urticaria,* wheals appearing upon the skin and hæmorrhages taking place into their centers and gradually spreading.

Erythema nodosum, characterized by circumscribed, nut-sized, inflammatory swellings upon the tibial regions, with subsequent bruise-like discolorations, is frequently referred to by writers as a rheumatic manifestation. That it may and does occur at times in rheumatic subjects, and sometimes, indeed, during an attack of rheumatism, is conceded. S. Mackenzie, from a study of collected cases, concluded that erythema nodosum is frequently, if not gener-

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ally, an expression of rheumatism, even when no definite rheumatic symptoms are present.

Harrison, who personally observed 80 cases of erythema nodosum among 15,000 skin diseases, denies its relationship to rheumatism.

That this cutaneous manifestation is a genuine rheumatic process, there is, in my opinion, grave reason to doubt.

Erythema nodosum occurs far more commonly in females than in males, an incidence not true of rheumatism. Of 108 cases collected by S. Mackenzie from various London hospitals, the disease was noted in females five times as often as in males. Görlitz observed the disease in 23 females out 30 cases.

Among 30 cases observed by Görlitz, he noted endocarditis develop in 3 cases, and as antecedents he noted in 3 acute rheumatism, 1 measles, 1 diphtheria, 1 gastric catarrh, 9 anæmia, and in 15 cases nothing at all.

Erythema nodosum occurs occasionally in the course of syphilis, tuberculosis, glandular fever, diphtheria, malaria, and is believed to be induced at times by digestive disorders, autointoxication, bad sanitation, and such drugs as iodides and antipyrine.

The disease is not rarely associated with erythema multiforme, of which it is considered by some writers to be a variety.

Many of the ambulant cases of erythema nodosum, seen in skin clinics, have some articular pain; this has doubtless served to accentuate the alleged rheumatic nature of the affection. Surely joint pains or even articular inflammation do not constitute rheumatism any more than a scarlatinoid rash means scarlet fever. In the vast majority of cases erythema nodosum occurs independently of any other active systemic disease.

I should conclude that erythema nodosum is a toxic affection, and, like erythema multiforme, may be produced by a variety of poisons. The rheumatic infection constitutes one of the most frequent poisons capable of producing the disease.

Purpura or Peliosis Rheumatica.—Purpuric eruptions may occur in the course of almost any of the infectious diseases. They are commonest in rheumatism, small-pox, malaria, typhus, measles, and scarlet fever. They may occur in the course of diphtheria, profound anæmia, scurvy, hæmophilia, syphilis, nephritis, cirrhosis of the liver, etc. Various drugs may cause purpuric eruptions, such as the iodides, antipyrine, salicylates, chloral, ergot, arsenic, sulphonal, etc.

The form known as peliosis rheumatica, or Schönlein's disease, according to Crocker, presents nearly all the characteristics of an exudative erythema, except that the hæmorrhages are a constant instead of an exceptional feature,

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and the joint trouble is rather more severe than usual. The lesions consist of reddish, raised patches or papules, which are primarily purpuric, or later become hæmorrhagic and exhibit a purplish color which does not disappear upon pressure. The disease is rare under 10 years of age and over 60. Purpura rheumatica is more often associated with rheumatism than with any other infectious process. It is not quite convincing, however, that articular pains accompanying purpura represents the same infection as purpuric patches in acute articular rheumatism. The fact may be recalled that purpuric spots and joint pains and swellings may occur after the use of antitoxic sera.

Some years ago I saw a patient suffering from scarlet fever who developed endocarditis, pleurisy, arthritis, and an extensive hæmorrhagic purpura. A culture from the heart valves at autopsy yielded a diphtheroid bacillus.

In conclusion I should say that while erythema nodosum and purpura rheumatica appear to bear more of a relationship to rheumatism than to any other infectious malady, yet they can scarcely be regarded as pure and essential rheumatic processes. The toxin of rheumatism produces these conditions oftener than the toxins of other infections. There would seem, therefore, to be no genuine rheumatic cutaneous manifestations, save rheumatic nodules, and to use a Hibernianism, these are subdermal and not cutaneous.

THE PREVALENCE OF EYE-STRAIN IN SCHOOL CHILDREN.

By WALTER S. CORNELL, M.D.

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The inaccurate statements as to the prevalence of physical and mental defects in school children, which frequently appear in the daily press and occasionally in scientific essays, have led the writer to go over the literature at hand, bearing on the existence of eye-strain in children.

Accurate figures will doubtless be welcome to those who are especially interested in ophthalmology, or who are called upon by teachers and patients for information upon this live subject.

For the sake of conciseness the information presented is arranged under five headings, the comparison of which will reveal the distinctive purpose of each, and serve to prevent the confusion at present existing by reason of inaccurate quotations. They are as follows:—

I. *Prevalence of defective eyes requiring glasses at least for near work.*

II. *Proportion of school children and students actually wearing glasses.*

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III. *Degree of visual acuity in school children.*

IV. *Varieties of errors of refraction and percentage of each.*

V. *Effects of neglect of defective eyes.*

1. The production of myopia from an original condition of hyperopia when the hyperopia is neglected.
2. Proportion of children with defective eyes, who complain of headaches, tired eyes, blurring, etc.
3. Decrease in myopia in recent years; due to early correction of errors of refraction.

I. *Proportion of eyes sufficiently defective to require glasses for (at least) reading and other near work.*

The difficulties incident to examining large numbers of school children without the consent of parents, preclude the use of a cycloplegic such as atropine, and consequently approximate figures only can be given. They are close enough, however, for practical purposes.

The first four authorities present the proportion of children considered as needing eye-glasses, the condition having been ascertained in the course of routine school inspection.

	Defective.
Eleven hundred Philadelphia school children possessing a visual acuity of $^6/_6$ or subjective symptoms of eye-strain——headache, discomfort, blurring. ("Eye-Strain in School Children," by W. S. Cornell, New York Medical Journal, June 1, 1907.)	32 per cent.
Philadelphia Public Schools. (Philadelphia Health Report, 1906.)	28.5 per cent.
New York Public Schools. (New York City Health Report, 1906.)	29.5 per cent.
Twenty thousand London school children—Number of children possessing two-thirds or less vision. (Report of the Public Health Commission of the London County Council.) At least	26 per cent.
Four hundred and twenty Boston school children. (R. G. Loring, Boston Medical and Surgical Journal, December 13, 1906.)	23 per cent.
Eight hundred University of Pennsylvania students who would naturally show a greater proportion of defect than elementary school children. ("Results of the Examination of Students' Eyes," by W. C. Posey and R. T. McKenzie, Journal A. M. A., March 23, 1907.)	30.4 per cent.
The most careful tests of the eyes of elementary school children ever made are those published by S. D. Risley many years ago. Twenty-five hundred Philadelphia school children were tested for visual acuity and range of accommodation, and an ophthalmoscopic examination also was made in each case. The judgment of these ophthalmologists was that fifty-three per cent. of all school children could use glasses for fine work with benefit to their eyes. (Transactions of the Pennsylvania Medical Society, 1881. Also Philadelphia Medical Times, July 30, 1881.)	52 per cent.

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II. *Proportion of school children and students actually wearing glasses.*

	Elementary Schools.	High Schools.	Colleges.
Eleven hundred Philadelphia school children. (W. S. Cornell.)	7.5 per cent.		
Eight hundred Philadelphia school children. (L. C. Wessels, Philadelphia Health Report, 1905.)	21.5 per cent.		
Eighty-four poor Philadelphia children in a small elementary school of the first three grades—twenty-seven possessing defective vision. (W. S. Cornell.)	0		
Four hundred and twenty Boston school children. (R. G. Loring.)	4.5 per cent		
Eight hundred and fifty high school students.—North East Manual Training High School, Philadelphia. (W. S. Cornell.)	.....	9 per cent.	
Eight hundred students University of Pennsylvania. (W. C. Posey and R. T. McKenzie.)	.....	(Another 8 per had discarded glasses).	34.3 per cent.

III. *Degree of visual acuity in school children.*

Tested by ability to read Snellen test type for distance. The number of children with defective vision does not include the numerous cases of eye-strain in which full vision is maintained by effort; and so does not equal the total number of children needing eye-glasses. (See I.)

The London Report for 1904, already quoted, gives the first year's work of eight ophthalmic surgeons, especially appointed to examine the eyes of school children. The result of 20,000 examinations is recorded, demonstrating that about 7.3 per cent. of all children suffer from $^{6}/_{18}$ or worse defective vision. The percentages given are calculated from the number of children stated in the report.

	GOOD	FAIR			BAD		
Acuity or degree of vision	6/6	6/9	6/12	6/18	6/24	6/30	6/60 (or worse.)
Number of Children.—Mixed grades and sexes	15,339	2780	1098	858	315	166	188
Percentage of same	.74	13.4	5.3	4.1	1.5	.8	.9

Record of visual acuity of eleven hundred and fifty-six Philadelphia school children.

	Allison School.	Kane School.	Morris School.	Total.	Total per cent.
Normal	214	221	324	759	65.7
Normal	164	156	248	568	

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	Allison School.	Kane School.	Morris School.	Total.	Total per cent.
Normal minus, but no symptoms of eye-strain.....	38	39	42	119	
One eye normal, the other eye nearly so.....	12	26	34	72	
Defective	86	162	149	397	34.3
One eye normal and one eye with vision less than two-thirds	5	10	17	32	
Both eyes defective—equally defective	69	131	103	303	
Normal minus vision and showing symptoms of eye-strain	(27)	(14)	(10)	(51)	
Vision three-quarters and two-thirds	(40)	(80)	(65)	(185)	
Vision one-half or less....	(2)	(37)	(28)	(67)	
Both eyes defective—unequally defective.....	12	21	29	62	
Vision in better eye two-thirds or more.....	(8)	(16)	(20)	(44)	
Vision in better eye less than two-thirds.....	(4)	(5)	(9)	(18)	
Total number of children.....	300	383	473	1156	100

IMPORTANT NOTE.—Illumination of test card by natural light only. Vision recorded with the aid of eye glasses in all cases already wearing them. Squint cases (total 29) included in above summary. (W. S. Cornell, New York Medical Journal, June 1, 1907.)

IV. *Variety of errors of refraction and percentage of each.*

Twenty-five hundred Philadelphia school children of all grades:—

Emmetropia . . . . 11.19 per cent.
Hyperopia (simple, 31.23 per cent.) .....
(With astigmatism, 42.81 per cent.) ..... 74.04 per cent.
Myopia (simple, 2.68 per cent.) .....
(With astigmatism, 11.02 per cent.) ..... 13.70 per cent.
Mixed astigmatism ..... 1.07 per cent.

(S. D. Risley in "System of Diseases of the Eye." Norris & Oliver, Vol. II., p. 353.)

Eight hundred Philadelphia school children of Primary and Grammar grades:—

Emmetropia ..... 44.5 per cent.
Hyperopia (both simple hyperopia and hyperopia with astigmatism.) .. 52 per cent.
Myopia (both simple myopia and myopia with astigmatism.) ..... 3.5 per cent.

(L. C. Wessels.) Determined by test with lenses, but not by ophthalmoscopic test. The hyperopia percentage is, therefore, the manifest hyperopia only; the latent hyperopia including most of those eyes classed here as emmetropia.

V. *Effects of neglect on defective eyes subjected to continued use.*

This is shown in the following tables giving the proportion of cases of

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myopia. Myopia has been shown to be due to lengthening of the eye ball through degeneration and stretching of the coats of an originally hyperopic eye subjected to strain.

	German City Schools (Cohn, of Breslau)	Philadelphia Schools (Risley)		(Wessels)	Boston School (Loring)	University of Pennsylvania (Posey and McKenzie)
		Years				
Elementary Schools..	6.7%	8½	4.27%	3.35%	3%	14.7%
				6-14 years	(Not including 3½% mixed astigmatism.)	(12.75% in lower classes, 19.75% in the upper classes.)
Higher Girls' Schools	7.7%	11½	8.75%			
Intermediate Schools	10.3%	14½	11.50%			
Academy Grade ..... (Real Schulen)	19.7%	17½	19.33%			
Gymnasium	26.2%					
University.....	59.5%					

NOTE.—The colored race possesses much better average vision than the white race. Myopia is exceedingly rare.
(J. D. Minor, Memphis, Tenn. P. A. Callan, New York City.)

The existence of headache, local fatigue and other symptoms (asthenopia) is exceedingly common in eye-strain, the latter furnishing a great majority of the cases of headache occurring in children. A study of about two hundred cases of eye-strain by the writer revealed asthenopia in two-thirds of the cases. A careful study of the subject, classic in its exactness, is given by S. D. Risley in Norris and Oliver, "System of Diseases of the Eye." Taken for each variety of refractive error, it varies from 35 per cent. in simple hyperopia to 74 per cent. in mixed astigmatism.

With the knowledge that hyperopia is the original defect when defect exists, and that myopia is a secondary condition, occurring in certain neglected cases, it naturally follows that a decrease in the number of myopia cases should occur, as the medical profession and the public have come to realize the value of the early correction of optical error.

Such has actually been the case and is an encouraging sign, even though the general class of congenitally defective eyes is probably as numerous as ever. We are indebted for this demonstration to S. D. Risley and his assistants, who reviewed one hundred and ninety-five thousand prescriptions for glasses, written over the period extending from 1874 to 1893. There was found to be a steady and progressive decline in the number of those prescriptions written for the correction of myopia.

Quoting briefly without fractional exactness (for tables and charts see Norris and Oliver Vol. II, pp. 376-377) in the year 1877, 27 per cent. of all prescriptions were for myopia, 20 per cent. in 1885, and 16 per cent. in 1893.

It is well to bear in mind these different accurate studies most of which

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are unfortunately buried in technical reports, since there is an unprecedented general interest in the subject at the present time, with its accompanying tendency to unintentional misstatement.

The Therapeutics of Diseases Which Involve the Internal Secretions.

THE APPLIED THERAPEUTICS OF THYROID PREPARATIONS.

By Charles E. de M. Sajous, M. D.
Philadelphia.

Text-books of physiology afford no clue as to the manner in which the thyroid gland carries on its functions. Some physiologists hold that the thyroid and parathyroids, by means of an internal secretion, "exercise an important control over the processes of nutrition of the body," as Howell[1] states; others contend that the purpose of these organs "is to neutralize or destroy toxic substances formed in the metabolism of the rest of the body." Others again, assert that it increases metabolic activity, especially catabolism. Ample evidence is available to show that the thyroid influences all these functions; but *how* does it do so? This is what they have failed to explain. In a recent work[2] a distinguished French physiologist, Laulanié, referring to the "mode of action" of the thyroid secretion, writes: "For the time being, one can perceive no solution of this problem." This naturally entails a corresponding lack of knowledge concerning the physiological action of thyroid preparations and their use as remedies.

In the first volume of "Internal Secretions"[3] I submitted evidence to the effect that the phenomena ascribed to the thyroid gland were not caused by this organ alone, but by a system of organs (the thyroid, pituitary body, and adrenals) of which it formed a part, the adrenal system. Additional study of the question submitted in my recently published second volume[4] has only served to confirm and amplify this conclusion. I pointed out therein: (1) That the adrenal secretion (carried to the lungs with the venous blood of the inferior vena cava) takes up the oxygen of the air to become the oxidiz-

[1] Howell: "Text-Book of Physiol." 2nd. Ed., p. 797, 1907.

[2] Laulanié: "Eléments de Physiologie," 2nd Ed., p. 485, 1905.

"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [3] page 186; [4] page 1072.

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ing constituent of hæmoglobin which sustains the body-heat, metabolism, and nutrition[5]; (2) that the adrenals are themselves governed by a nerve-center located in the pituitary body whose nerves reach them by way of the spinal cord, the sympathetic chain, and the splanchnic nerves[6]; and, moreover, that the secretions of the thyroid and parathyroids, acting jointly, serve to sensitize all cellular elements (by increasing the inflammability of their phosphorus during oxidation), including wastes, bacilli, etc., thus constituting the substance now known under various names: "opsonin," "agglutinin," "precipitin," "sensibilisatrice," etc.[7] Finally—and bearing particularly upon the therapeutic action of thyroid extract—I showed (3) that besides increasing the combustibility of all phosphorus-laden elements, and in virtue of this action, the thyroid secretion increased markedly the activity of all nerve centers, and particularly that of the *adrenal center,* owing to the very great sensibility of this center as the homologue of the nasal olfactory area, and, as such, of the "test-organ" of mollusks and other invertebrates.[8]

If these few principles are clearly apprehended, the physiological action of thyroid extract will become self-evident: it acts, on the whole, as if the thyroid and parathyroids were overactive. In other words, in the light of my researches, *thyroid extract enhances general metabolism and nutrition by increasing the functional activity of the adrenals, thus augmenting the proportion of oxyhæmoglobin in the blood. As this in turn enhances metabolism in all organs, the defensive agents of the blood—the phagocytes and auto-antitoxin—are increased in proportion. The bactericidal and antitoxic process is materially facilitated by a direct action of the thyroid extract on bacteria, cellular detritus, wastes, etc.: that of increasing their sensibility and vulnerability to the destructive action of phagocytes and auto-antitoxin.*

The use of thyroid in therapeutics has necessarily been empirical so far, but if the above definition of its physiological action is made the basis of its indications, its value in a large number of disorders will not only assert itself, but the process through which it is beneficial will appear. No less important is a third advantage: the ability of the practitioner to predicate the effects the thyroid extract will have in a given case, and therefore to avoid its use in many diseases—in marked contrast with the prevailing custom of administering it haphazardly, often to the detriment of the sufferer. Of course, this involves the necessity of accepting my own conception of the pathogenesis of various diseases in which the adrenals, the thyroid, and the pituitary body are considered among the most important organs of the body. But if the corre-

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [5] page 1008; [6] page 966; [7] page 1087; [8] page 966.

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sponding feature of our knowledge of disease is looked for in text-books it will be found wanting; indeed, a catalogue, as it were, of symptoms, pathological observations, and remedies recommended, will be available, but *the relations of cause to effect—a clear understanding of which will alone raise the therapeutical efforts of even the present-day well-trained physician above empiricism*—will be missed. This is due to the impossibility of accounting intelligently for the phenomena witnessed when the functions of what I have termed the adrenal system—the pituitary, the thyroid (including the parathyroids), and the adrenals—are left out of consideration.

Thyroid preparations are being used increasingly in Europe, though still empirically notwithstanding tentative efforts to account for their physiological action. In a work recently published in Paris by Drs. Léopold-Lévi and H. de Rothschild,[9] for example, the authors recognize that the thyroid influences directly the thermogenic, nervous, and pilous systems, the calcium equilibrium and the appetite, and, moreover, through the heart and sympathetic system, general metabolism; by way of explanation, however, they compare the whole mechanism of thyroid action to a complicated industrial mechanism in which the boiler would be represented by the thyroid gland. That this explanation adds nothing to our knowledge of the physiology of the organ is obvious.

This cannot be said, however, of the clinical portion of the work, based on a study of the action of thyroid extract in some 400 cases. Those given in detail are not only studied with great care, but the authors abundantly sustain their contention that the thyroid gland plays a very important rôle in the physio-pathology of many diseases (in accord with the views I advanced to that effect over five years ago) and that thyroid preparations will often insure recovery where all other remedies fail. The work of Léopold-Lévi and de Rothschild affords an excellent foundation for the study of its physiological action; their material, supplemented by some of my own, will be mainly used, therefore, for the present analysis.

Their conception of the physiology of the thyroid affording no ground for a logical interpretation of the relations between cause and effect in their cases, Lévi and de Rothschild must necessarily restrict their study to an enumeration of symptoms and of the effects obtained from thyroid preparations. My own conception of the physiological rôle of the thyroid secretion, therefore, will be used for this purpose. Indeed, as will now be shown, the interpretation submitted in brief in the foregoing page explains *all* the morbid

[9] Léopold-Lévi and de Rothschild: "Etudes sur la physio-pathologie du corps thyroide et de l'hypophyse." Published by O. Doin, Paris, 1908.

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processes enumerated by them, both as to pathogenesis and symptomatology, and also the physiological action of thyroid extract *in each instance.*

Migraine.

Seven cases are given in detail. In Case I the headaches had appeared at the age of 12 years, and had recurred periodically until the patient presented herself at 32. A feature of this case is that pregnancy materially decreased the intensity of the accesses, preventing them totally in one instance. Marked lassitude, sensitiveness to cold, anorexia, and arthralgia were concomitant symptoms. Case V was very similar, but she presented in addition roughness of the skin and a tendency to obesity. Case VI suffered from stubborn constipation, sensitiveness to cold, and periodical loss of hair. In this instance there occurred after successful treatment, a temporary relapse as the result of an emotion. In Case IV there was marked asthenia; what hair remained was prematurely gray; the paroxysms were especially acute during menstruation, which lasted three to four days. In Case VII menstrual period and migraine had occurred simultaneously for twenty-five years, and the accesses failed to appear during pregnancy. In Case III a boy of 11 years, whose mother was also migrainous, there was marked sensitiveness to cold, anorexia, flaccidity, and torpor of the muscles, hypersensitiveness of the nervous system, and particularly of the dental nerves.

All these cases were greatly improved or cured by thyroid extract in small doses. This agrees with my own observations. As stated elsewhere[10]: "Thyroid extract, 2 grains (0.13 gm.), during each meal, and an occasional saline cathartic, are very effective, especially if the patient can lead an out-of-door life." One of my cases is now of nearly four years' standing; the paroxysms, which recurred several times a month, now appear only after injudicious eating, emotions, etc., three or four times a year. Léopold-Lévi and de Rothschild obtained their beneficial results with even smaller doses, 1½ grain (0.10 gm.), given less frequently, of a preparation corresponding in strength used for myself, *i.e.*, 1 to 5 of fresh gland (Parke, Davis & Co.'s desiccated thyroid). Consiglio[11] also recommends thyroid extract in migraine.

The manner in which these effects were produced in all these cases, in the light of my own interpretation of the functions of the thyroid—in conjunction with the other organs of the adrenal system—will best be explained by analyzing each of the symptoms in turn.

Sensitiveness to Cold.—Léopold-Lévi and de Rothschild urge the rela-

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907; [10] page 1527.

[11] Consiglio: Gazzetta de osped. e. d. clin., Nov., 1904.

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tionship between the thyroid and the thermic equilibrium, to which Hertoghe called attention. If, according to my views (1903) the thyroid is considered as the physiological excitant of the adrenal center in the pituitary, and this center in turn increases the functional activity of the adrenals—the source of the substance which supplies the entire organism with oxygen, the process through which thyroid preparations antagonize the inadequate heat-supply is self-evident: it excites the adrenal center (in addition to the fact that it enhances the sensitiveness of all phosphorus-laden bodies to oxidation) and thereby general oxygenation and heat production.

Anorexia.—This symptom is a normal result of inadequate metabolism. The tissues being consumed, as it were, with diminished activity, the need of food-stuffs is reduced in proportion. Thyroid extract by enhancing metabolism through its stimulating action on the adrenal system, and, therefore, on general oxygenation, creates a greater demand for cell-building materials; hence the increase of appetite. The boulimia observed in sthenic stages of acromegaly and exophthalmic goiter, in which the adrenal system is overactive, are examples of an exaggerated phase of this process.

Muscular Weakness and Lassitude.—These phenomena are normal results of inadequate metabolism and oxygenation. The skeletal muscles constitute a large proportion of the elements in which the vital process is most active. That thyroid extract by enhancing the activity of the adrenal system, and therefore oxygenation of the tissues, should increase the nutrition of the muscles and their strength is also plain.

Constipation.—Muscular weakness applies not only to the skeletal muscles, but also to the muscular layer of the intestines. As peristalsis is dependent upon this layer, general adynamia entails a corresponding deficiency of peristaltic activity and, therefore, stubborn constipation. Thyroid extract antagonizes this condition by increasing markedly the muscular activity, *i. e.*, peristalsis.

Hypersensitiveness of the Nervous System.—I have pointed out[12] that the nerves were the seat of a circulation corresponding with that of all organs; that axis-cylinders, their cell bodies, etc., were made up, in part, of minute capillaries in which blood-plasma, laden with oxidizing substance (adrenoxidase) circulated. Moreover, I showed that these capillaries were the continuation of arterioles which formed part of the general circulation. Now, the general muscular debility, referred to above, affecting all muscles, the muscular layer of these arterioles is naturally relaxed, and the nervi nervorum,

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[12] "Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907; page 915.

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the sensitive fibrils of nerves, receiving an excess of blood, they become hypersensitive. Thyroid extract by its influence on muscular metabolism, causes the arterioles to resume their normal caliber, thus counteracting the hyperæmia and hypersensitiveness of the nerves.

Pain.—The above process is closely related to the production of pain, which may be defined as a result of hyperæmia of the sensory nerve-elements. But in migraine, additional factors come into play[13] to localize the pain and render it extremely acute. The first of these is inadequate activity of the adrenal system and its ubiquitous result: an accumulation of waste-products—owing to inadequate oxidation and hydrolysis—in the blood. As these products tend to excite the vasomotor center[14] the arteries of the entire body are contracted and an excess of blood is projected into the terminal vessels, including those which supply the nerves. When neural vessels, from one cause or another: cold, repeated dilation, disease of their coats or ganglia, etc. (conditions to which the vessels of the face and head, the fifth pair, are particularly liable owing to exposure to draughts, the proximity of the large arterial trunks, great nerve centers, ganglia, etc.), yield too readily to an increase of the blood-pressure owing to any, even slight, disturbance of the waste equilibrium, the sensory nerve elements become hyperæmic and correspondingly painful. The marked effect of thyroid extract in such cases is readily accounted for: by enhancing the functional activity of the adrenal center, it hastens the destruction of wastes and restores the normal waste-equilibrium in the blood-stream, thus preventing the painful paroxysms. As the adrenal center is itself better nourished when stimulated by the thyroid product, its protective influence remains adequate under normal dietetic conditions, and it is only when a great excess of wastes is thrown into the circulation through excessive eating, or shock, emotions, etc., which depress the functional activity of the nerve-centers, that an attack may recur.

Influence of Pregnancy and Menstruation. — The aggravation of the paroxysms during menstruation, and, in fact, their occurrence only during the periods in certain cases is also a normal result of the known increase of wastes in the blood at such times. Conversely, the non-recurrence of the paroxysms of migraine during pregnancy is a normal corollary of the processes, morbid and curative, just outlined. As I have pointed out, the adrenal system is overactive during pregnancy in order to destroy the toxic wastes of the fœtus in addition to those of the mother. The absence of

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [13] page 1267; [14] page 1525.

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migrainous paroxysms is thus due to the identical auto-protective mechanism whose functions are simulated by thyroid extract.

Obesity, Roughness of the Skin, Alopecia, and Premature Senility.—The presence of these phenomena in some cases of migraine point to its underlying cause in such cases: myxœdema—a morbid condition in which, as every knows, thyroid preparations produce effects little short of marvellous—by enhancing, I would add, the functional efficiency of the adrenal system.

(To be continued in the next number.)

Editorial

THE TREATMENT OF NEURASTHENIA AMONG THE POOR.

In connection with the Social Service Department of the Massachusetts General Hospital, Dr. James J. Putnam and I are endeavoring to develop a method, or group of methods, for the treatment of functional disorders, with special reference to cases such as occur in working people with incomes of less than $1000 a year. To us the problem of the impoverished neurasthenic is one of the most appealing and difficult now confronting the social worker and the hospital physician. The expensive methods of physical therapeutics ordinarily employed by physicians and sanitoria in the treatment of neurasthenia and allied conditions, are entirely out of the question for the poor; and so far as we know, no systematic psychotherapeutic work has yet been developed for their benefit.

We are trying to train a couple of intelligent and refined young women, who have already had discipline in social work, so that they may be able to take up the *systematic training of neurasthenics,* including under this training:—

(a) Occupations, such as clay modeling.

(b) Investigation and supervision of household work, and the psychical conditions existing in the family.

(c) The systematic re-education of the mental and moral nature.

(d) Such influences as pass more or less unconsciously from person to person when true friendship is established.

We hope also to do for our neurasthenics, in the more or less distant future, something parallel to what is called *"placing out"* in the vocabulary of the child-helping societies. We are convinced that there is no single element

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in the treatment of neurasthenics which is of greater importance than the environment, especially the domestic and spiritual environment, in which they find themselves. To put the patient in a position whence he is likely to be *drawn into the current* of a normal, happy, and busy family life, is, we believe, one of the most important things that can be done.

In suitable cases we wish to use all the classical methods of psychotherapy—such as explanation, persuasion, psychic analysis, and suggestion.

The judicious use of well-selected reading matter seems to us also of importance.

Taken broadly, our main plan is to combine in each case a proper selection from a considerable list of psychotherapeutic methods and remedies, many of which have been lauded by one or another investigator as the cure-all; but each of which seems to us most valuable when used in connection with one or more other methods, and especially when skillfully adapted to the needs and the temperament of each individual.

It goes without saying that we keep a vigilant watch upon the more obvious hygienic conditions, although we believe that the arousing of interest and the systematic training of habits are the most powerful weapons within our control.

RICHARD C. CABOT, M.D.*

Cyclopædia of Current Literature

ADENOIDS AND TONSILS,

The subject is considered by the writer from the standpoint of the general practitioner, with special reference to an examination of the throat in chronic systemic infection, and a consideration of the question of status lymphaticus in these cases. The work of investigation in the matter of the tonsils as portals of infection is briefly reviewed. The author does not believe that the question as to whether in a particular patient the throat is a point of entrance for joint infections can be truthfully answered. It is wise to thoroughly extirpate enlarged tonsils if they are present and thus replace a structure of at least lessened resistance by a sound wall of tissue. Undoubtedly, a tonsil which becomes infected on slight provocation, constantly menaces the patient with lesions which range all the way from a lacunar tonsillitis to endocarditis and pulmonary tuberculosis. Adenoids are undoubtedly responsible for many of the febrile attacks of childhood. They may become suddenly inflamed, cause caraches from temporary closure of the eustachian tubes, and are more common than even the laryngol-

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ogist has supposed. H. G. Longworthy (Boston Medical and Surgical Journal, January 30, 1908).

ALCOHOL, TISSUE CHANGES AFTER INJECTION OF.

Observations on animals after subcutaneous injections of alcohol show that no local necrosis or abscess formation was found at the point of injection. Further, no formation of new connective tissue in the liver or elsewhere was noted. In many cases erosions of the mucous membrane of the stomach and intestines were found. These experiments suggest that alcohol is not a causal, but a predisposing, factor in cirrhosis of the liver in man. P. v. Baumgarten (Berliner klinische Wochenschrift, October 21, 1907; Boston Medical and Surgical Journal, December 26, 1907).

ALOPECIA AREATA, FORMALDEHYDE IN.

The case of a young girl is recorded, with a circular patch three inches in diameter on the scalp at the side of the occiput, hairless, smooth, and shining. The treatment consisted in painting it with a 20 per cent. solution of formaldehyde. This was done every day for the first week or two, until signs of inflammatory reaction appeared. The treatment was then suspended, and a sedative ointment applied. When the inflammation subsided the formaldehyde was again continued, stopping the application as soon as inflammatory trouble appeared. This routine of treatment was persevered in for about six or nine months. About this time a growth of hair made its appearance, continued to grow, and in every way corresponded with the surrounding hair. One year after cessation of treatment the growth of hair was continuing in a perfectly normal way. J. J. McInerny (British Medical Journal, January 25, 1908).

ANÆMIA, TUBERCULOUS.

There is a type of apparent anæmia which is often mistaken for real chlorosis, until an examination of the blood shows that the number of red corpuscles and the percentage of hæmoglobin is normal. In such cases the writer thinks a history of past or present tuberculous disease can always be found. This condition was recognized by Trousseau, and was called by him "false chlorosis" or "tuberculous anæmia." Several cases of this condition are cited in detail. In treatment, iron is to be avoided, and open air and hygiene are important. A. James (British Medical Journal, December 28, 1907).

APOPLEXY, TREATMENT OF.

Great stress is laid by the writer on the necessity for leaving the patient where he is, not attempting to remove him. If he has to be taken elsewhere, the transportation must be done with extreme gentleness, and the distance reduced to the minimum. He should never be allowed to travel, even in the mildest cases. The clothing should be removed as if the patient had been severely wounded—cut off if necessary. The aim is to keep him absolutely quiet; he must not make a movement or speak, but be placed with the chest and head slightly raised, in a quiet, cool room. No one should be allowed to tempt him to speak or induce emotional excitement. An ice bag to the affected side of the head in case the face is congested and hot is useful. In case of difficulty in respiration during coma, the mouth and throat should be wiped out repeatedly and the head bent forward a little to keep the tongue from falling back, or

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the jaw and tongue may have to be drawn forward. Oppenheim, recommends lying on the side.

In case the patient vomits, he must be quietly and cautiously turned on the side and the vomited masses wiped away to keep the air passages free, supporting the head the while. The nurse in such cases must be well-trained, and if the patient is a very heavy man a strong male nurse is preferable. No means are known by which vomiting can be prevented in these circumstances. Mustard pastes and moist heat to the epigastric region or calves might be tried and venesection should be considered. The latter generally produces a transient improvement, and in exceptional cases the improvement may be permanent.

The theoretical objections against venesection are not sustained in practice. Still better results might follow if it were done earlier. The writer advocates it when the cerebral hæmorrhage is diagnosed beyond question, and the congestion in the head with full bounding pulse persists, while the comatose condition continues unmodified or is growing worse. Small, weak, rapid pulse and pallor contraindicate venesection. From 200 to 300 c.c. of blood are withdrawn from the arm on the unparalyzed side.

Collapse, insomnia, headache, convulsions, should be treated symptomatically, not shrinking from narcotics. It is generally better to leave the patient quiet than to apply mustard paste, vinegar enemas, or other revulsive measures of doubtful utility. The physician should himself investigate the patient's capacity for swallowing. One spoonful can be swallowed, perhaps, but a little time is required for the parts to recover from the fatigue of deglutition before another spoonful can be managed. The second spoonful should never be given until convinced that the preceding one has been duly swallowed. Even when the swallowing reflex seems working normally, nothing should be given by the mouth in case of complete unconsciousness or great stupor. The patient does not feel hunger or thirst in such case, and if the blood-pressure drops from transient inanition, so much the better. In case of weak pulse or collapse, fluids should be supplied by the rectum or by subcutaneous infusion. Feeding by the stomach tube is not advisable except when the paralysis of the swallowing muscles persists with full consciousness.

Purgatives disturb the patient, and straining is liable to be dangerous, but a cautiously given rectal enema may be useful, and the urine may have to be drawn several times a day. The iodids should be commenced at once in case of gradually developing hemiplegia in arteriosclerotics, but it is better to wait for a week after an apoplectic stroke, especially when the patients are unaccustomed to the drug. Goldscheider (Deutsche medizinische Wochenschrift, November 28, 1907; Journal of the American Medical Association, January 4, 1908).

APPENDICITIS, A NEW SYMPTOM OF,

Pressure on the corresponding point of the opposite or left side will elicit the typical pain at McBurney's point in case of appendicitis, but not with other abdominal affections. Testing this indirect means of eliciting the pain at McBurney's point on more than one hundred patients during the two years since has confirmed its differential value; it was never found unless there was some affection of the cæcum or appendix. T. Rovsing (Zentralblatt für Chirurgie,

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October 26, 1907; American Medicine, January, 1908).

APPENDICITIS AND DISEASES IN THE FEMALE PELVIS, CONFUSION OF,

Any inflammatory disease within the abdomen primarily involving one organ may from continuity or contiguity result in other tissues or organs being involved. The blood-supply of the abdomen and pelvis is such that infectious micro-organisms may be carried from one diseased organ to another, thereby starting a similar disease in a part through which this infected blood flows. The lymphatics may also convey disease to organs in the line of their distribution. The nerve-supply of the organs of the lower abdomen and pelvis and their sympathetic relationship is such that pain may be referred to localities not affected. It is possible for more than one form of disease to exist within an abdomen simultaneously, and the symptoms to become quite complex thereby. Besides actual disease, there may exist a misplaced position of one or more organs, thereby changing the symptoms considerably in the presence of disease, or resulting in contiguous organs being affected because of this displacement. Also the misplaced position alone may cause distress, which resembles some actual form of disease. The character of the disease, the variety of each form of disease, the number of organs involved, the associated displacement of organs, the temperament, environment, and avocation of the individual sufferer are all factors to be considered in summing up the case. A careful personal history, a thorough physical examination of the individual, the aid of chemical, bacteriological investigation and a searching examination with all the apparatus at command, *i. e.* cystoscope, proctoscope, microscope, and x-ray, will clear up the majority of cases. In certain cases if no positive diagnosis can be made, there may be clear indications for operative interference to cure the disease. In complicated cases a thorough search through a proper-sized opening should be made to terminate the symptoms complained of, and a record of all findings for future reference made. A. E. Benjamin (Medical Record, February 15, 1908).

APPENDICITIS, THE VALUE OF THE DIFFERENTIAL LEUCOCYTE COUNT IN ACUTE,

Blood examination in cases of acute appendicitis is of great value in determining the severity of the condition and therefore deciding whether or not immediate operative interference is indicated. The degree of leucocytosis, formerly considered an important diagnostic aid, is too variable to be of any practical value. The relative disproportion between the percentage of polynuclears and the degree of leucocytosis is reliable in a majority of cases, but the number of exceptions is so great that its practical value in determining immediate operation becomes very small. The estimation of the percentage of polynuclears alone is more reliable than either of the preceding methods and therefore, together with the fact that it is the one most easily made, the method to be recommended. A polynuclear percentage of 90 per cent. or more indicates a severe process that needs immediate operative interference; a percentage below 78 per cent. means a "safe" or mild process; a percentage between the two extremes speaks for the one condition or the other, according as it approaches the one extreme or

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the other. A. H. Noehren (Annals of Surgery, February, 1908).

BRIGHT'S DISEASE, HÆMORRHAGE IN.

Manifestations of tendency to hæmorrhage occurring in connection with Bright's disease include epistaxis, purpura, metrorrhagia, hæmoptysis, hæmatemesis, hæmaturia and bleeding into the brain, eye and ear. In a few cases, hæmorrhage has occurred from multiple sources, indicating a true hæmorrhagic diathesis. The author favors the view that the nephritis is the cause of the tendency to hæmorrhage, most probably by toxic influence, possibly aided by arterial disease and hypertension. The prognosis in these hæmorrhagic cases is unfavorable. D. Riesman (American Journal Medical Sciences, November, 1907).

BRONCHIAL ASTHMA AND ITS TREATMENT.

Bronchial asthma is explained by the author as the result of a peculiar phase of secretion and exudation in the mucosa of the bronchioles. It is evidently a vasomotor and secretory process, due to some morbid predisposition on the part of the secreting cells in the mucosa, which allows them to get suddenly into this morbid condition from some comparatively insignificant cause. The morbid vasomotor and exudative conditions are revealed by the peculiar characteristics of the sputum expelled after an attack, although in some cases the process may not progress far enough to be followed by much expectoration. The conditions in the bronchioles seem to be similar to those of urticaria, which has many features in common with bronchial asthma. The author thinks it probable also that similar conditions are liable to prevail in the mucosa of the digestive tract, and suggests that the condition known as "colica mucosa" may be of this nature. Excellent results are related in treatment of bronchial asthma with measures to induce sweating. He has completely cured by this means eleven patients with bronchial asthma of many years' standing, but adds that another patient did not seem to be benefited. Ordinary measures to induce sweating are useful, but the best results were obtained with local or general incandescent electric light baths. The writer generally begins with five-minute local exposures, with 8 or 10 lights, applying the bath daily and increasing to a maximum of fifteen or twenty minutes, or he begins at once with the general bath with 40 lights. After the bath, the patient steps at once into a hot-water bath, to clean the skin of sweat, and then goes to bed for two hours to cool off gradually. The course usually requires from four to six weeks, but some patients consider themselves cured in two weeks. None of the author's patients returned with recurrence during the several years since he has been applying this treatment. A. Strümpell (Medizinische Klinik, January 5; Journal of the American Medical Association, February 8, 1908).

CANCER, ITS ETIOLOGY AND TREATMENT BY TRYPSIN.

Lowered vitality, whether due to faulty metabolism, alcoholism, overstimulation, diseases of the optic nerves, and general or local debilities, is, in the opinion of the writer, the predisposing factor in malignant disease. Chronic irritation, of no matter what character, is the determining factor; the cells of the tissue irritated, unable to respond normally to the irritant, assume characteristics suitable for their environ-

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ment, thus conforming to a natural law. Trypsin is of considerable value in cancer. Carcinoma of the cervix, rodent ulcer, and epithelioma are eminently suitable for the treatment. Gout, rheumatoid arthritis, and chronic rheumatism ought to be treated by injections of trypsin, when other better known methods have failed. Regarding amylopsin, the writer states that after injecting it single and in combination with trypsin, he has found it of no value in the treatment of cancer. He relates the histories of two personal cases, one of abdominal cancer and one of mammary cancer. Both cases eventually proving fatal, although the trypsin injections seemed to have exerted a marked influence on the original neoplastic deposits.

Trypsin does not seem to have any evil effect on healthy living tissues, but in the presence of an alkali it splits proteids into proteoses, peptones, and polypeptides; these are further split up into leucine, tyrosine, aspartic acid, hexone bases, and other amino compounds. It attacks all proteids alike, and exercises no selective action on cancer tissue. These facts would explain the reason why the two cases showed marked improvement up to a certain point; also why the first patient grew progressively weaker, while the second died rather unexpectedly from toxæmia. The trypsin not only digested the growths but attacked the elaborated proteids, which were circulating in the blood for the nourishment of the organism, and converted them into toxic products; hence trypsin cannot be injected into the body for an indefinite period without producing deleterious effects, so giving rise to the very condition suitable for the growth of cancer. The author is, however, convinced of the power of trypsin to digest cancer; it must be applied directly to the disease and not in its neighborhood. Cancer of the internal organs cannot be successfully treated by this method, whereas rodent ulcer, epithelioma, and cancer of the cervix are eminently suitable for the treatment provided the cases are in the early stage. J. Alcindor (British Medical Journal, January 11, 1908).

CANCER, TREATMENT OF.

The germ theory of cancer may be dismissed as being irrational and pretty thoroughly discredited. But that it is due to faulty nutrition, assimilation and absorption may be fairly assumed, and these conditions are brought about by one or more of a variety of causes. As regards nutrition, three ways are recognized which make for a departure from health—overnutrition, undernutrition, and faulty nutrition. By this last is meant that, while there may not be too much or too little food taken, the material composing it is deleterious. In the first case, that of overnutrition, too much food is taken, more than the body needs for its proper maintenance. As time goes on and this condition of things continues, the blood-making organs become tired and manufacture less perfect material from which the "builders" at some one or more selected places begin to replace with imperfect or cancer cells the more normal tissues of the affected parts. As the eliminative absorbents fail to remove this imperfect material as fast as it is deposited, we have the growing tumor. Though less frequently, much the same conditions obtain in undernutrition. The blood-making organs themselves are poorly nourished and furnish poor material for the building of perfectly healthy cells. By material which gives a faulty nutrition,

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the author means all flesh foods which, containing toxines and poisons of various kinds, are totally unfit for human consumption and have much to do, either directly or indirectly, in bringing about a condition of things that goes to the building of cancers. If cancer is a local disease, it should not return after removal, as it usually does. On the theory that there is a general wrong condition of the blood-making, assimilative, and eliminative functions, it is readily explainable; for usually nothing is effectively done after an operation for the removal of the growth to remedy the wrongs; and not only that, but the patient's strength is seriously sapped by the operation itself, if that operation has been accomplished by knife or plaster. Thus an early recurrence is to be looked for.

The author thinks that cancer of the breast, when not too large and near the suppurative stage, can be treated with the greatest promise of success with electricity and massage, both local and general, together with a special diet from which all flesh foods are entirely excluded. The patient should always be under the physician's immediate care, at his residence or private sanatorium, where every detail of the treatment can be most thoroughly carried out. A. G. Henry (Medical Record, February 1, 1908).

CEREBROSPINAL MENINGITIS, SORE THROAT IN EPIDEMIC.

Attention is called anew to the specific sore throat in this disease, especially from the epidemiologic standpoint. The meningococci lurk back in the pharynx. A case is reported of a circumscribed but fatal meningitis, which developed in an apparently healthy young man immediately after an operation for hæmorrhoids under spinal anæthesia. The meningococci could not be found anywhere else in the body, and no possible opportunity for the infection could be discovered, even on testing all the persons in the environment in the search for a possible bacilli carrier. The author thinks that this case suggests a possibility that the meningococcus, like the pneumococcus, is capable of leading a saprophytic existence in healthy individuals. Healthy meningococcus carriers were recently discovered in a German regiment and barracks where no cases of epidemic cerebrospinal meningitis had ever been known. Westenhœffer (Berliner klinische Wochenschrift September 23, 1907; Journal of the American Medical Association, October 26, 1907).

CHOLELITHIASIS, DIAGNOSIS OF.

One is usually able to distinguish between a chronic jaundice due to cholelithiasis or stone in the common duct from cancer of the ducts, or of the head of the pancreas and neighboring parts; but it is extremely difficult and may be impossible to tell which one of the latter causes is operative. H. B. Allyn (American Medicine, January, 1908).

CHOLESTEATOMA, INFECTED, INVOLVING THE LABYRINTH AND ACCOMPANIED BY TYPICAL NYSTAGMUS.

Although for many years nystagmus has been recognized as one of the symptoms, both of suppuration of the labyrinth and of cerebellar abscess, it is only of late that it has been possible to use the symptom as a means of establishing a differential diagnosis between these two conditions.

The workers in Politzer's clinic have demonstrated the fact, that, if a patient, who is suffering from suppurative dis-

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ease of the middle ear, develops nystagmus when he rotates his eyes toward the healthy ear, and does not when the eyes are rotated in the opposite direction, the existence of suppurative disease of the labyrinth is positive. The reverse is true for abscess of the cerebellum. Geo. H. Mathewson (The Larynscope, November, 1907).

CHOREA, PUPILLARY SIGNS IN.

Attention is called by the writer to the following: (1) Hippus.—The first is hippus. In many children who are more than slightly affected by the ordinary sthenic type of chorea the movements of the iris are extraordinarily wide and rapid. This is readily explained by the jerky movements of the eyeballs and the consequent quick and frequent variations in the amount of light which reaches the retinæ, and also the suddenly altering accommodation for the many objects which in turn are included in the visual field. This necessarily renders the detection of rhythmical oscillatory movements of the iris no easy matter, but during intervals of quiet these movements, which constitute hippus, are sometimes noticeable. (2) Peculiarities of movement of accommodation. That the contraction of the pupils to accommodation may be extremely rapid and sudden has already been mentioned, but it will frequently be seen also that the reaction is asynchronous on the two sides, one pupil contracting, while the other remains temporarily dilated. This is especially marked when the pupils are unequal, the larger usually reacting more slowly. (3) Contraction. Contraction of the pupils both to accommodation and to light is usually ill-sustained, and here again the affection may be unequal, so that when both are contracted one will sometimes be seen, as it were, to tire out and dilate whilst the other remains small. (4) Varying inequality of the pupils. It may be noticed in some cases that one pupil remains persistently smaller than the other during the complete examination. This may continue for several weeks and only be replaced by the normal equality when the child has recovered or, on the other hand, when next seen the pupils may be equal or that which was formerly the larger may now be the smaller. (5) Eccentric pupils. Eccentricity of the pupils may occasionally be present and may become better marked when the pupil is contracted and less obvious when dilated. F. Langmead (Lancet, January 18, 1908).

DIABETES, PATHOLOGY OF.

Whenever sugar is absorbed into the blood from whatever source, all the body cells fix as much of it as they require in the form of glycogen, the liver perhaps having power to store whatever is in excess of immediate requirements. In order to make use of this glycogen it must be reconverted into sugar, and this, in the case of the liver, is done by means of a ferment. Now, this ferment may be the normal sugar-forming ferment of the pancreas, which, after performing its function in the intestine, is absorbed and made use of again in the tissues, perhaps undergoing some change till such times as it is wanted. When this ferment is not present, the glycogen in the cells cannot be made use of. But sugar may be an essential requirement of these cells, and, with the power of using the fixed glycogen gone, the small normal quantity floating in the blood may be of little use to supply this requirement. Hence a demand on all sides for sugar, resulting in increased

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appetite, and the conversion of proteid and anything that can be so transformed into sugar, so that the sugar percentage of the blood is raised above normal. But as soon as this occurs two things happen: (1) There is a demand for water, producing thirst, on account of the increased density of the blood, and (2) the kidneys begin to filter off sugar; so that, with abundance of glycogen and sugar, the tissues are starving for it, the cells striving to establish a higher sugar percentage in the blood, the kidneys always frustrating them. This theory would explain the good effect of pancreatic extracts in diabetes; the value of morphine may be simply that it diminishes metabolism. H. J. McNab (British Medical Journal, January 11, 1908).

DIABETES MELLITUS, SYMPTOMATOLOGY AND TREATMENT OF.

Diabetes mellitus is not a disease constant in its manifestations and symptoms, but is fickle and elusive in the extreme. No drugs are specific hence the treatment is necessarily mostly dietetic—yet he who follows blindly and innocently the well-known diet list as found in every text-book, for all his cases, will benefit but a fortunate few. Each case must be studied individually; the amount of intake must be carefully compared with the corresponding amount of output, whether it be carbohydrates, fats, proteids, etc., and the particular article or articles of food that are offending, be excluded rather than the wholesale cutting off of the class to which such food or foods may belong. Hygienic measures, cleanliness, pleasant environment and rest play an important part in the treatment, and it is desirable that the patient remains under the constant supervision of a physician, or better still in a sanitarium until his individual condition is ascertained. F. E. Beal (American Medicine, January, 1908).

ECLAMPSIA, TREATMENT BY TINCTURE OF IODINE.

Iodine as an intrauterine injection affords favorable results even in severe cases of puerperal fever. The writer disinfects the vagina, in case it is necessary lightly curettes the endometrium, and by using Deleris sound injects into the uterus from 150 to 100 grams of a mixture of equal parts of tincture of iodine and warm water. It is necessary to make sure of a return flow. After some minutes, or on the slightest pain, the fluid is allowed to flow out, and the cavity is washed out with boiled water to remove the excess of iodine. No tampons are used. The author has obtained a cure in seven cases of puerperal fever with very rapid results from the injections. The good results are ascribed to the large amount of iodine used and to the nascent state of the iodine. Aldo Mergari (La Riforma Medica; American Medicine, January, 1908).

EPITHELIOMA, ETIOLOGY OF.

Cancer occurs at that point where irritation and exposure to an alkaline secretion coexist. When a chemical which has the power of combining with the acidophilic elements is injected into a tissue made up of epithelium and connective tissue the epithelium proliferates and invades the connective tissue, simulating the process in beginning epithelioma. The same chemical process which prevents blood from coagulating limits the invasion of one tissue by another. Epithelium everywhere rests on a tissue similar to the membrane elastica of the blood vessel. It

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is this layer that confines epithelium within normal limit. The aberrant growth of cells is but the expression of some disturbance in the chemical relationship of the different kinds of cells. The results of experiments, based on the knowledge of tinction chemistry, permits us to state in general terms the nature of such disturbance of chemical balance. A. E. Hertzler (Journal of the American Medical Association, February 8, 1908).

FRACTURE OF THE CARPAL SCAPHOID.

Simple fracture of the carpal scaphoid is caused as a rule by a fall of moderate height on the extended hand. This form of fracture is more apt to be overlooked than the complicated type on account of the absence of deformity and the resemblance it bears to a sprained wrist. Exquisite tenderness on pressure with the wrist slightly flexed and adducted, just below and to the dorsal side of the radial styloid, with extreme pain on any effort to extension, are the two most characteristic symptoms.

Union will take place provided the fractured surfaces are in contact and the wrist is immobilized for from three to four weeks. The final result, under proper treatment, will depend upon the amount of separation or displacement of the fragments. In cases where the position of the fragments is good the result should be practically perfect. If there is dislocation or considerable displacement of a fragment which cannot be corrected, one or both fragments should be removed without delay. William A. Downes (Annals of Surgery, January, 1908.

FRACTURE OF NECK OF FEMUR, TREATMENT.

Fracture of the neck of the femur occurs under fifty years of age more frequently than was formerly believed. Any injury to the hip followed by disability should suggest the possibility of a fracture of the neck, and requires an expert examination aided by an x-ray photograph. Reduction of the deformity with complete immobilization of the fracture during the period of repair is advised by means of a plaster bandage in all suitable cases. This is to be followed by early gymnastic movements, active rather than passive. All weight bearing upon the fracture is to be avoided for from three to four months. J. B. Walker (Annals of Surgery, January, 1908).

GASTRIC ULCER.

Many cases of so-called dyspepsia, characterized for weeks or months by flatulence, water-brash, burning and distress after food, where the epigastrium shows tenderness and the test-meal hyperacidity, are in reality gastric ulcer, even when the fæces show no occult blood. If, in such cases, a month's ordinary treatment for the condition does not cause improvement, the author has learned to insist on a rigid course directed to the cure of ulcer, even though no positive evidence of its presence has yet appeared. The writer considers that there is an early stage of gastric ulcer, lasting for weeks or months, during which rigid medical treatment can effect a cure; but its clinical picture does not correspond to the classical one and the diagnosis at the time must be inferred rather than positively demonstrated. In the later stage, commonly described as gastric ulcer, the symptoms are really due to complications rather than to the original disease; (a) to perigastric adhesions; (b) to pyloric stenosis; (c) to gastric dilatation and retention; (d) to localized peritonitis; (e) to the

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opening of a large blood vessel; (f) to perforation of the stomach wall; complications beyond medical treatment and falling into the surgeon's domain. W. F. Cheney (Journal of the American Medical Association, February 8, 1908).

GASTRIC ULCER: TREATMENT.

In the treatment of acute gastric ulcer the great need is, first, early diagnosis, and, second, strict discipline in enforcing proper diet and relief of hyperacidity for a prolonged period. When these requirements are fulfilled, there is as a rule little trouble in bringing about immediate relief of symptoms and ultimate cure. In cases of bleeding, body and mind should be put completely to rest, and the stomach should be kept out of function. Sometimes careful and rapid lavage with ice water or weak adrenalin is of service. Morphine with atropin or hyoscin should be given in amount sufficient to quiet the patient. Bismuth and light magnesium carbonate in gelatin water given frequently will control overacidity. Warm saline solution (30 to 60 cubic centimeters) is to be given by rectum at frequent intervals. No food is to be given for several days or a week. Even nutrient enemata are to be withheld at first; after two or three days small injections of milk and glucose should be used. In case of alarming weakness, food should be given in form of thin gruel or arrowroot or farina, or milk and lime water. In convalescence no one rule for feeding should be adhered to as invariable. Some patients do best on rather full feeding with animal foods; others can stand only bland liquid foods. Hyperacidity is to be controlled by milk alkalies. External heat or cold may give relief. Olive oil may promote gastric calm. Long continuance of treatment and of observation after cessation of symptoms must be emphasized. Surgery is called for in ulcer cases for the following indications: Perforation, otherwise uncontrollable bleeding, pyloric stenosis or motor insufficiency due to adhesions, and continued severe pain. C. G. Stockton (American Journal Medical Science, December, 1907).

GONORRHŒA, TREATMENT OF ACUTE.

Two methods are considered by the writer, the abortive and the expectant, the choice of treatment depending upon the limitation of the infection to the anterior urethra or its spread along the entire length of the canal. The abortive treatment is effective only in cases which are seen within a day or two after the appearance of symptoms and before the discharge becomes purulent. It consists in cleansing the urethra, determining the extent of infection with the urethroscope (after the application of a local anæsthetic), and then the free application to the urethra of a 2 to 4 per cent. solution of silver nitrate. This may be repeated, if necessary, in forty-eight hours. If the disease has passed the initial stage, urethral irrigation twice daily, for ten days, with a weak solution of potassium permanganate, will often prevent its further progress. In the expectant method of treatment cleanliness of the penis and urethra is imperative, antiseptic lotions and plain hot water being frequently applied. The diet should be simple, alcohol should be abstained from, and the urine should be made alkaline. When the pain and scalding of micturition are ended the balsams are indicated. Irrigation with permanganate of potash solution should be practised several times a week. John Pardoe (Practitioner, January, 1908).

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HÆMOPTYSIS TUBERCULOUS, AMYL NITRITE IN.

Amyl nitrite has been used fifteen times in seven cases of hæmorrhage from tuberculous lungs by the writer, and each time he has been impressed with the prompt action of the drug and its efficiency in these conditions. The hæmorrhage was arrested as if by magic; blood ceased to accumulate in the bronchial passages, and thus the evil effects of its decomposition were avoided. Five or six drops of amyl nitrite on a wad of cotton were inhaled, and the hæmorrhage ceased at once and did not recur in the majority. The inhalations were repeated several times afterward during the day. It proved effectual, even in cases in which no other measure had given relief. The writer supplemented the nitrite by the slower acting action of an enema of gelatin to which calcium chloride had been added, with fluid extract of hydrastis internally. Since this technic has been adopted no patient has succumbed to hæmoptysis, and whenever it appears it is speedily controlled. A. Braga (Gazzetta degli Ospedali, December 22, 1907; Journal of the American Medical Association, February 15, 1908).

HEADACHE AS A SYMPTOM OF LOCAL DISORDERS.

From a study of 1700 cases of headache, the writers come to the following conclusions: A neuropathic diathesis is an essential condition of the occurrence of almost all chronic headaches. The great majority of cases have, in addition to a neuropathic diathesis, some source of local irritation to the nervous system, which often manifests itself in no other subjective symptom. A minority of the cases are suffering from anæmia, or a toxæmic condition, which, as before, occurs in a person of neuropathic diathesis and may manifest itself in no other subjective symptom of importance. In some cases a local irritation of the nervous system is reinforced by a toxæmia. The classical type of migraine is regarded as a headache, due to the presence of a local irritation, practically invariably eye-strain, in an individual of markedly neuropathic diathesis, in which the immediate occurrence of the attacks may be due to the special irritability of the nervous system, caused by transient, but frequently recurring, conditions of toxæmia, which in a less neurotic individual, or one who was not constantly subjected to the nervous wear and tear of eye-strain, would be incapable of producing any such effects. They have found relief of migraine in most cases by extremely painstaking correction of eye-strain.

In the drug treatment of headaches, the authors speak enthusiastically of the systematic use of quinine sulphate, 2 grains combined with nitrate of aconitin, $^1/_{400}$ of a grain, every two hours, and of cannabis Indica in ⅛ to ¼-grain doses of Hering's extract, three times a day. Of the coal tar analgesics they prefer antipyrin guarded with caffein. F. Coggeshall and W. E. MacCoy (Journal of the American Medical Association, January 4, 1908).

HYPEREMESIS GRAVIDARUM.

The various causes are described by the writer predisposing to this condition, namely, congenital malpositions and shapes of the stomach, usually associated with external evidence in the breasts, pelvis, etc.; acquired malpositions in shapes of the stomach brought about by tight lacing; organic stomach diseases; chlorosis and anæmia; nervous diseases; poor living and improper nour-

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ishment, and changes in the sexual organs. For reason adduced, he considers that hyperemesis gravidarum is really caused by syncytial intoxication of at present undetermined origin. It seems to induce a certain temporary immunity, hence its greater commonness in primiparæ.

The author suggests treatment by the injection daily of from three to five quarts in divided portions of normal saline solution, allowed to flow very slowly, into the bowel. An irrigating can or fountain syringe may be used, with a large-sized rubber catheter attached, which is passed high into the bowel, the irrigator being not more than three feet above the level of the patient. The solution is lukewarm. Rest in bed, iced milk in tablespoonful doses as the only nourishment, and a cleansing irrigation of the bowels every morning is also recommended. In great irritation of the bowels, the addition of from ten to twenty drops of tincture of opium to the saline solution is advised. W. H. Vogt (Medical Fortnightly, January 25, 1908).

ICTERUS NEONATORUM, PATHOLOGY OF.

The writer considers that both the liver and the disintegration of the maternal erythrocytes stand in a causal relation to this affection, which is, in a certain sense, physiological. The disintegration referred to is nature's method of supplying iron chromatin in sufficient quantity to enable the infant to continue the hematopoietic function on its own account and is accomplished in the following manner: In the hematopoietic organs of the new born, along with the formation of erythroblasts, some special body is formed, cytolysin or hemolysin, which dissolves in the plasma and imparts to the latter globulicidal properties for erythrocytes other than those elaborated by himself, hence the total disintegration of maternal red cells. Now, if the formation of this globulicidal substance goes on at a normal rate, the disintegration of maternal red cells will go on at the same rate and the liver will not be suddenly overcharged with hematic pigment; but should the formation of this cytolysin go on with unusual rapidity, the contrary will happen, the liver will be overloaded with pigments derived from the disintegrated blood cells, the activity of hepatic cells will be overtaxed, and they will elaborate a surplus of biliary pigments. Thus the question is finally reduced to a disturbance of the equilibrium between katabolism and anabolism in this particular function of blood-making. Through some cause, so far unknown, the cytolysin becomes more abundant, more red cells are destroyed at a time, more hemochromatin is stored in the liver than can be used up in the process of blood-making, and the surplus actuates the hyperactivity of the liver cells which transform more blood pigments into bile pigments.

As to the absorption of the surplus of bile pigments which finally causes the jaundice, three possibilities are present: (1) As the terminal capillaries which surround the hepatic cells constitute a portal system, the intravascular and perivascular pressure equals zero. Now, if the hepatic cells are overfilled, the pressure within the bile capillaries will forcibly raise after a time, and the biliary pigments will penetrate into the lymph spaces and reach the general circulation through the thoracic duct. (2) Should we assume an increase in the viscidity of the bile duct due to a state of saturation with biliary pigments, the possibil-

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ity of temporary plugging of the bile capillaries might be considered. In this case the chances of absorption of the bile through the lymph spaces are evident. (3) Another way of absorption, peculiar to the new-born, is through the ductus venosus, as pointed out by Quincke: The flow of bile into the intestines not being impaired in icterus neonatorum, but rather increased, part of it is reabsorbed, gathered into the portal vein, and partially poured into the vena cava through the ductus venosus, which remains unobstructed during the first few days of extrauterine life. A. Graves (New York Medical Journal, December 3, 1907).

INFLUENZA, WEATHER INSTABILITY AND.

The muggy weather conditions of midwinter usually accompanying low barometer are related to influenzal predisposition as are high barometer and the associated dry, cold, windy phenomena to influenzal propagation; the former pertaining to the body, the latter to the bacilli; the one to susceptibility and incubation, the other to invasion and pathologic activity. H. S. Anders (American Medicine, January, 1908).

IODOFORMIC ACID IN PHTHISIS.

The writer describes his method of using iodoformic acid in chronic ulcerative phthisis. He employs two solutions; a 1 per cent. solution for hypodermic use (from 10 to 30 drops, beginning with smaller dose and gradually increasing to the higher dose, or even to 40 drops in some cases) and a weaker solution made from this (1 part in 150) for internal use. Of the latter, one tablespoonful representing 1 cubic centimeter of the stronger solution is an average dose. Some stomachs will not bear this and it should then be given still further diluted. In other cases sometimes larger doses can be tolerated; the behavior of the stomach can be taken as a guide. The solution may be given from two to five times daily, after breakfast, but before the other meals. It should never be combined with other drugs, but should be taken at least an hour apart from any other medicine. The intramuscular injections are, however, the most rational method and the only one by which the phthisical process in the lungs can be directly influenced, and the writer usually injects into the thickest portion of the interscapular muscles. Full directions are given as to details, antiseptic precautions, etc.

The author's theory is that the formic acid is the more effective or more important component, and that the action of the iodine is that of a catalyzer, and in many ways analogous to that of a ferment. The specific effects of iodine are never observed from the ingestion or the injections. The primary therapeutic effect seems to be a local one, relieving pain, lessening cough and expectoration and improving the character of the latter, and checking ulceration and caseation. Constitutionally it appears to affect assimilation in a rather direct way and the patient begins to gain in weight before any appreciable local changes have been produced. The accessory treatment with drugs, diet, fresh air, etc., is described, the yolk cure in particular. H. Stern (Journal of the American Medical Association, February 1, 1908).

LARYNGEAL CANCER.

This condition should be suspected whenever an elderly, previously healthy, person shows signs of unexplainable

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throat trouble, especially hoarseness. The details of the operative treatment of twenty-four cases reported, and it is stated that seven of these patients are still in good health from one to eight years after the removal of the growth. Three succumbed during the total removal of the larynx, one from sepsis, seven have died since from intercurrent affections, five patients have returned with recurrence, one after two years of health. The after history of one patient could not be learned. In one case an otherwise healthy man of 43 had a chronic catarrhal laryngitis with polypoid thickening of the walls. He derived great relief from applications of nitrate of silver, and although warned against their too constant use, he continued to use the remedy almost continuously for five years, when a cancerous ulceration developed. The writer has found that persons bearing the germs of tuberculosis seem particularly exposed to malignant disease. He warns that iodid treatment is liable to produce a temporary improvement in a cancerous process, which may mask the diagnosis. Interference with the movements of the vocal cords is an early symptom. Positive microscopic findings are decisive, but it is sometimes difficult to obtain differentiating material. All but five of the patients were men, and nearly all were smokers. N. Wolkowitsch (Deutsche Zeitschrift für Chirurgie, September, 1907. Journal of the American Medical Association, December 14, 1907).

MIDDLE-EAR, CHRONIC SUPPURATION OF; CONSERVATIVE TREATMENT.

Chronic suppuration of the middle ear is of serious consequence, because of the dangerous complications which might arise. The resort to surgical interference should not be considered until the more conservative methods have been tried. In the carrying out of the treatment the patient should not be made wholly dependent on the surgeon, but should be taught how to use the remedies which have been found efficacious. Bichlorid of mercury and boracic acid are the antiseptics that have been found of the greatest value in syringing out of the ear. In the chronic cases, the first choice is given to the mercurial salt, while the boracic acid solution is the favorite in acute conditions. The ear is syringed as often as is necessary. The cleansing is made more effectual by the use of the Politzer bag, and especially by the Valsalvian inflation. Samuel Theobald (Journal of the American Medical Association, November 23, 1907).

MIDDLE-EAR SUPPURATION, OSSICULECTOMY IN CHRONIC.

The author advises operation in those cases which show caries of one or more of the ossicles, destruction of the whole or part of the drum, or where granulation tissue is springing from any part of the middle-ear cavity or ossicular chain. Between nine and ten per cent. of the neglected cases of middle-ear suppuration sooner or later develop symptoms demanding surgical interference. All cases should first receive thorough medical treatment, excepting those patients who give symptoms of intracranial or mastoid involvement. Ossiculectomy has given satisfactory results in many cases and is not as dangerous as a more radical operation, as is proven by the mortality being practically nil. Frederick L. Jack (Journal of the American Medical Association, December 28, 1907).

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PURULENT OPHTHALMIA.

The first matter for consideration in the treatment of purulent ophthalmia is keeping the eye free from secretions, and the writer usually advises the patient to use a saturated solution of boric acid as frequently as is necessary for the purpose. When cleansing the eye himself, he often uses a 1 to 10,000 bichloride solution. He does not favor the use of cold, as a rule, since it has a tendency to lower the nutrition of the parts. As regards surgical procedures, he says that scarification of the chemotic ring around the cornea may be used, as the judgment of the surgeon directs; canthotomy is called for only when the pressure symptoms are severe and prolonged, and slitting of the upper eyelid is rarely necessary and only in extreme cases. Early and vigorous treatment renders surgery needless in the great majority of cases. Bullen's shield, thoroughly cleansed and disinfected with protargol solution (30 grains to the ounce of water) should be used in every monocular case, and so adjusted as to permit free ventilation and to avoid clouding of the lens by moisture from the eye. If there is reason to suspect a gonococcal infection, the writer at once prescribes the following: Hydrastin acetate, grains i to ij; boric acid, grains x; borax, grains xx; deodorized tincture of opium, *m*xv; distilled water, sufficient for ℥i, to be put in the eye freely and frequently during the day after cleaning. The author also uses a solution of from 5 to 10 per cent. of protargol, and has it used several times in the intervals between visits. If the patient is an infant, or is suffering from photophobia, he instills a drop or two of atropine sulphate solution, one grain to the ounce, to put the iris at rest, gives full instructions as the case may require, and has the patient report in twenty-four hours. If the infection progresses, the treatment must be still more vigorous, frequent irrigation to keep the eye free from secretion, and, following each cleansing, the instillation of the hydrastin solution, together with the free use of a protargol solution (10 to 15 per cent.) at stated intervals, three to six times in the twenty-four hours. The writer considers protargol the most valuable of the silver salts for these cases, on account of its superior penetrating power. The treatment here suggested has been found most satisfactory. Serious corneal complications are very rare when cases are seen early. G. H. Price (Journal of the American Medical Association, November 23, 1907).

PNEUMONIA IN CHILDREN.

In discussing the treatment of pneumonia, the writer states that digitalis does not act so well in children as in adults. A reliable preparation of strophanthus is safer and better than digitalis. Caffein is an excellent drug for a weak heart when cerebral congestion is not marked. Camphor as a heart stimulant is not appreciated by most physicians, but it is one of the best we have. A child of one year may take 1 dram of camphor water every two hours. Alcohol is rarely of service in bronchial pneumonia. In collapse from heart failure a hypodermic of ether may be given immediately, followed by the slower-acting but more persistent strychnin sulphate (from $^1/_{60}$ to $^1/_{30}$ grain for a child of one year), or by a syringeful of camphorated oil. In lobar pneumonia cold compresses are of great value in the early stages. In most children the dosage of drugs is proportionately larger than in adults, and in pneumonia they should be given to the limit of tolerance. In pneumonia, the case should never be

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given up, but stimulated to the bitter end. F. H. Lamb (Cincinnati Lancet-Clinic, January 4, 1908).

RHINITIS, ATROPHIC.

The unilateral form of atrophic rhinitis differs from the bilateral form both etiologically and clinically, and it may be relieved by surgical treatment. The writer considers the etiologic factors of the unilateral form to be as follows: (1) Deviation of the septum causing nasal obstruction on the one side and excessive roominess on the other, which abnormalities do not reach their greatest proportions until after puberty. (2) The establishment of chronic mucopurulent discharge as a result of acute rhinitis or influenza. (3) Drying of the mucopus into crusts, due in a great measure to the fact that, the opposite side being occluded by the deviation, the whole duty of warming and moistening the inspired air is thrown on the patent side, and hence an undue amount of moisture is abstracted and the discharges become dry and adherent to the mucous membrane. (4) Roominess of the affected side preventing the expulsion of these dried discharges by blowing the nose. (5) Putrefaction of the retained crusts leading to ozæna or stench.

The treatment in all cases is based on keeping the nasal cavities absolutely clean and preventing the retention, drying, and putrefaction of the discharge. The simplest method is by loosening the crusts with hydrogen peroxide, followed by syringing until every particle of crust and discharge has been removed; then packing the nasal cavity or cavities with cyanide gauze. The gauze should be removed night and morning and the nose syringed and repacked. In unilateral atrophic rhinitis reduction in size of the too roomy nasal cavity, enlargement of the stenosed nostril, and restoration of its activity and removal of the mucopurulent discharge are indicated. Killian's submucous resection of the septum fulfills the first and second indications, and the appropriate use of local remedies the third. C. A. Parker (Clinical Journal, October 16, 1907).

SEPTICÆMIA FROM WOUND INFECTION, LOCAL APPLICATIONS OF ARSENIC IN.

Favorable results are reported by the author from local application of a very small amount of arsenious acid or white arsenic to the infected wound in cases of septicæmia. It is applied on a pledget of cotton small enough to be packed into the wound, or else sprinkled on the skin if only the epidermis is involved. The general symptoms gradually subside and the patient recovers. The writer states that in contact with the secretions of the wound the arsenic becomes transformed into soluble alkaline arsenites which penetrate through the adjacent tissue where they hydrate the altered cells and dry them up. It has also a powerful disinfecting action, destroying everything foreign it encounters, while respecting sound tissue. Another important property of the arsenic is its vasodilating influence, thus favoring the afflux of nourishing blood, while it contracts the lymphatics, thus obstructing diffusion of the toxins. The lymph is squeezed out, droplets constantly accumulating on the surface of the wound. To absorb them, moist antiseptic compresses are applied over the wound and region, above the arsenic. In his extensive experience with this treatment during the last two years, the writer has never observed any by-effects or symptoms of intoxication. He suggests that the arsenic treatment might prove use-

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ful in case of snake-bite, but has not had much clinical experience in this line. He believes that this local arsenic treatment will render surgical measures superfluous in many cases, and save limbs otherwise doomed to amputation to arrest the blood poisoning. S. Cerny (Semaine médicale, November 27, 1907).

TETANUS NEONATORUM COMPLICATED BY PNEUMONIA.

The first symptoms of the disease in the case reported appeared on the twelfth day of life. As a rule, the onset is from the third to the twelfth day, but rarely later. Antitoxin was not available at the time of admission, so there was no opportunity of carrying out that line of treatment. The convulsions were general, and only eight of them were observed after admission. Trismus was continuous until 70 grains of chloral had been administered, which produced relaxation on the fourth day of the patient's stay in the hospital. Vomiting, which had been so persistent during the first three days after admission, stopped entirely for a time, and subsequently was infrequent. The secretion from the wound was mainly serous, but at times was blood-stained. The characteristic cry was heard only on the second and third days after admission; at all other times the infant rested quietly. The vaginal discharge was an evidence of the general septic infection. The termination of the disease with pneumonia was probably due to a secondary infection. It may have been an aspiration pneumonia, owing to the frequent vomiting. The decreasing frequency of the clonic exacerbations, and the relaxation of the trismus, showed that the disease was abating. Then, too, the fact that the umbilical wound was practically healed, also tended to show that the infection had subsided. It seems fair to assume, therefore, that but for the pulmonary complication the termination would have been favorable instead of fatal. R. O. Clock (Archives of Pediatrics, January, 1908).

INTERNES FOR CITY HOSPITAL, NEW YORK.

Examinations for internes for the House Staff of this Hospital will be held on March 27 and 28 of this year, in New York City. The City Hospital has a large general service, with about 800 beds, comprising all branches of medicine and the length of service is 18 months. All applications for the position should be addressed to the Chairman of the Executive Committee, Dr. Smith Ely Jelliffe, 64 West 56th St., New York.

PHILADELPHIA MEDICAL SCHOOLS AND THE UNITED STATES PHARMACOPOEIA.

At an informal conference, called by Professor Joseph P. Remington, of the teachers named below in the medical schools of Philadelphia, the following resolution was passed:

"*Resolved*, That it is of the utmost importance for accuracy in prescribing, and in the treatment of disease, that students of medicine be instructed fully as to those portions of the United States Pharmacopœia which are of value to the practitioner, and that members of the medical profession be urged to prescribe the preparations of that publication, and further, that this resolution be forwarded to the medical and pharmaceutical journals, and to the teachers of Medicine and Therapeutics in the United States.

James Tyson, M.D., John H. Musser, M.D., John Marshall, M.D., Horatio C. Wood, Jr., M.D., H. A. Hare, M.D., J. W. Holland, M.D., Alfred Stengel, M.D., David L. Edsall, M.D.,

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Seneca Egbert, M.D., M. C. Thrush, M.D., James Wilson, M.D., E. Q. Thornton, M.D., John V. Shoemaker, M.D., I. Newton Snively, M.D., J. M. Anders, M.D., S. Solis Cohen, M.D., February 3, 1908.

Book Reviews

DIET IN HEALTH AND DISEASE. By Julius Friedenwald, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second Revised Edition. Octavo of 728 Pages. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $4.00 net; Half-Morocco, $5.00 net.

Probably the greatest difficulty that the general practitioner encounters in his work is the regulation of the diet for his sick patients, especially for those who manifest gastro-intestinal disturbances. A diet that one may thrive on may not supply the proper nutrition for another person suffering from the same disease.

This work fills up a large gap in the dietetic treatment of disease, and puts before the doctor the means of widely varying the administration of food. Its reception by the profession is properly indicated by the necessity for a second edition. The text is written in such a concise and comprehensive from as to enable the busy physician to obtain the desired information without the loss of valuable time by useless searching. In the new edition the section on salts has been rewritten; Prochownick's diet for pregnancy, complicated by contracted pelvis, has received a greater consideration. An account of the diet at water cures and Klemperer's work on oxaluria has been added. A revised list of recipes and a new set of diet-lists for ready reference have also been included in this work.

The sections on the preparation of food and its nutritional value, the rules for infant feeding and the diet in infectious diseases are well treated. The authors have fulfilled the promises of the title pages, and have presented to the profession the second edition of a work which should prove invaluable, especially to the medical man.—R. B. S.

CONSERVATIVE GYNECOLOGY AND ELECTRO-THERAPEUTICS. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity, by G. Betton Massey, M.D., Attending Surgeon to the American Oncologic Hospital, Philadelphia; Fellow and Ex-President of the American Electro-Therapeutic Association; Member of the American Medical Association, etc. Fifth Revised Edition. Illustrated with 12 Original, Full-page, Chromo-lithographic Plates and 15 Full-page, Half-tone Plates of Photographs Taken from Nature, and Numerous Engravings in the Text. Philadelphia: F. A. Davis Company, Publishers, 1906.

The author states in the preface that the demand for a fifth edition of this work within a year of the appearance of the fourth edition must be accepted as evidence of an increasing prevalence of conservatism in gynecology. It is certain that a book must be in demand to go through so many editions, and the last two within a year. This edition differs very little from its predecessor, only in that the author has availed himself of the opportunity to bring the technical consideration of the constant current derived from the street main still further up to date, and to further elaborate the chapters on the cataphoric treatment of cancer.—R. B. S.

OBSTETRICS FOR NURSES. By Joseph B. DeLee, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. Second Revised Edition. 12mo of 510 Pages, fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $2.50 net.

The author has written an excellent book on instructions for nurses and especially on obstetric nursing. The chapter devoted to anatomy, physiology and pathology of pregnancy,

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labor and puerperium, provides a good general knowledge of these subjects and, while giving in a clear and concise manner all the directions for the nurse in conducting a normal labor, and the meeting of obstetric emergencies, they are not filled with voluminous details of unusual positions and conditions. There is a constant appreciation of the relationship of physician and nurse in obstetrics. The book teems with valuable information on the detail of obstetric nursing and in this respect is a reliable guide to all nurses and physicians. No physician can read this book and fail to wish that all his obstetric nurses were prepared to provide the care and comforts to his patients according to the methods taught in this book. The illustrations are all of the first order and the type and paper excellent.—T. A. E.

DISEASES OF CHILDREN: FOR NURSES. Including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene, and Nursing. By Robert S. McCombs, M.D., Assistant Physician to the Dispensary and Instructor of Nurses at the Children's Hospital of Philadelphia. Octavo of 431 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $2.00 net.

Many attempts have been made in the past to publish text-books suitable for nurses, but with a goodly number of them their shortcomings have been quickly manifested in that the text has been beyond the intelligent comprehension of the nurse or has not been treated in a manner to be easily assimilated by the nurse in the limited time at her disposal for study.

The book before us for review is one relating entirely to the diseases of children. In its preparation the author has used as a basis the notes of his own lectures to the nurses at the Children's Hospital, Philadelphia, and has completed the text by frequent references to the more important authorities on children's diseases. The nurse's duties in the management of the different diseases are explicitly pointed out; she is informed of the complications which might arise in the various conditions; and is instructed how to take care of any emergency. The text is concise and to the point, without showing any curtailment of the, for her, essential subjects. The illustrations are well selected and should be of material assistance to the nurse in understanding the text. Temperature charts of the more important fevers are shown. Infant feeding and the preparation of the milk for infants form an important chapter. The drugs of the U. S. P. most commonly used in the treatment of children's diseases are given with their dosage for children two years of age. The chapter on weights, measures and abbreviations, and also the one on medical terminology should be found particularly useful.

The author is to be congratulated in meeting the wants of the nurse in such a practical manner, and it is with much pleasure that we recommend this book to those engaged in nursing children.—R. B. S.

DISEASES OF THE INTESTINES AND PERITONEUM. (American Edition of Nothnagle's Practice.) By Dr. Herrmann Nothnagel, of Vienna. Edited, with Additions, by H. D. Rolleston, M.D., F.R.C.P., Physician to St. George's Hospital, London, England. Revised, Second Edition. Octavo of 1059 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $5.00 net; Half-Morocco, $6.00 net.

Judging from the manifested and richly deserved popularity of this work since its first appearance, it is not in the least surprising that a second edition has become necessary. Although the death of the distinguished author is to be greatly lamented, his work has been carried on and executed by able hands in the person of the editor, Dr. Rolleston, who has performed his duties in a most commendable manner. Many additions have been made in order to bring the work abreast of advances in medical science; and the few alterations in the general arrangement of the text have merely added to the value of the book over previous editions.—R. B. S.

A TEXT-BOOK OF PHYSIOLOGY. For Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology, Johns Hopkins University, Baltimore. Second Edition, Thoroughly Revised. Octavo Volume of 939 Pages, Fully Illus-

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trated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $4.00 net; Half-Morocco, $5.50 net.

Howell's Physiology made a place for itself from the start, not only in medical schools among teachers of physiology and their pupils, but also among physicians—those who have realized that knowledge of this branch of science is essential to sound practical work. Although no fundamental change has been made in the arrangement or scope in this, the second edition, it has been carefully brought up to date by eliminating simultaneously what material could be spared.

In the preface of the present edition, the author writes: "Clinicians have failed to make full use of the material offered to them by the subject of physiology. Some explanation of this neglect is found in the fact that the physiologists themselves, not being practitioners, have no good opportunity to enforce the practical applications of their subject." When we recall the declarations of that great physiologist, Pawlow, that in many instances "the physician gives a more correct verdict concerning physiological processes than the physiologist himself" and that "clinical observation will consequently always remain a rich mine of physiological facts" we cannot but become impressed with the idea that Dr. Howell's plea should be reversed and that it is the physiologist who should scrutinize the world of pathological phenomena. Indeed, the reviewer has declared elsewhere, and is ready to repeat that the shortcomings of physiology are the main cause of the deplorable condition of Medicine to-day. Functions of the greatest import to the clinicians, as a foundation for the proper interpretation of morbid processes and their cure, are admittedly unknown to the physiologist and remain so, even though research in morbid processes would throw a flood of light upon every question, and serve indirectly to save lives innumerable.

As far as text-books of physiology go, however, it is nevertheless true that Howell's is one of the best in the English language.—C. E. de M. S.

HEART DISEASE AND THORACIC ANEURYSM. By F. J. Poynton, M.D., F.R.C.P., London.

AUSCULTATION AND PERCUSSION, Together with the Other Methods of Physical Examination of the Chest. By Samuel Gee, M.D., F.R.C.P., London.

DISEASES OF THE NOSE. By Ernest B. Waggett, M.A., M.B., B.C., (Cantab.).

DISEASES OF THE LARYNX. By Harold Barwell, M.D., (Lond.), F.R.C.P., (Eng.).

DISEASES OF THE EAR. By Hunter Tod, M.A., M.B., B.C. (Cantab.), F.R.C.S. (Eng.).

THE TREATMENT OF DISEASE IN CHILDREN. By G. A. Sutherland, M.D., F.R.C.P.

THE SKIN AFFECTIONS OF CHILDHOOD, with Special Reference to those of More Common Occurrence and Their Diagnosis and Treatment. By H. G. Adamson, M.D., (Lond.), M.R.C.P.

A MANUAL OF VENEREAL DISEASES. By Officers of the Royal Army Medical Corps. Introduction by Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Service; History, Statistics, Invaliding, etc, Lieutenant-Colonel C. H. Melville, R.A.M.C., Secretary to the Advisory Board; Clinical Pathology and Bacteriology, Colonel Leishman, R.A.M.C.; Clinical Course and Treatment, Major C. E. Pollock, R.A.M.C.

DISEASES OF THE MALE GENERATIVE ORGANS. By Edred M. Corner, M.A., M.B., B.Sc., M.C., F.R.C.S.

SURGICAL EMERGENCIES. By Percy Sargent, M.A., M.B., B.C. (Cantab.), F.R.C.S.

PRACTICAL ANÆSTHETICS. By H. Edmund G. Boyle, M.R.C.S., L.R.C.P.

ABEL'S LABORATORY HANDBOOK OF BACTERIOLOGY. Translated from the Tenth German Edition by M. H. Gordon, M.A., M.D. (Oxon.), B.Sc. With Additions by Dr. A. C. Houston, Dr. T. J. Horder and the Translator.

All published by the Oxford University Press. American Branch, 91 and 93 Fifth Avenue, New York. 1907. Cloth, $1.50 each.

The above series of "Oxford Medical Manuals" constitutes a veritable little library in itself, so replete are their pages in interesting practical facts upon the great variety of subjects treated. Poynton's book on the Heart facilitates greatly, if closely studied, the

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differential diagnosis of cardiac disorders, and is well illustrated. Gee on Auscultation and Percussion is a careful though succinct study of these features of diagnosis based on the author's considerable experience, but the fact that the literature of the subject was carefully perused is apparent on every page. Waggett, on the Nose, and Barwell, on the Larynx, hardly do justice to these subjects from the standpoint of a specialist, though they will serve as safe guides for the general practitioner and student. Tod, on the Ear, is more satisfactory, much care being given to technique. Sutherland on the "Treatment of Disease in Children" is intended for young practitioners, and aims to give not the many methods of treatment available in large works, but those which the author has found most useful in his own practice. Adamson's "Skin Affections of Childhood" includes only those of more common occurrence, but even these are quite numerous; for its size this volume affords considerable information of a highly practical character. The "Manual of Venereal Diseases," prepared by medical officers of the British army, Drs. Keogh, Melville, Leishman and Pollock, is of exceptional value and should be in the hands of every surgeon, being based upon a comprehensive collective investigation which comprised questions to acknowledged experts, medical officers of experience, visits to civil and military hospitals on the Continent, etc. It treats of the prevention, pathology, diagnosis and treatment of syphilis, gonorrhoea and soft chancre. Corner's "Disease of the Male Generative Organs" is quite comprehensive in its scope and is essentially practical and well calculated for the needs of the general practitioner. The gist of Sargent's "Surgical Emergencies," carefully memorized, would avoid many pangs of anxiety, especially for the practitioners who, in country districts, must depend upon their own resources, and insure excellent results wherever obtainable. The author overlooks an admirable measure for the immediate relief of the terrible pain caused by burns: painting the surface with common white paint known as "white lead." Boyle's "Practical Anæsthetics" is an excellent guide. Many physicians and students, unfortunately, do not hesitate to administer anæsthetics without having learned the technique or its dangers. These features are carefully though succinctly reviewed in this little volume. Finally, the series includes an excellent translation of Abel's well-known "Laboratory Handbook of Bacteriology" by Gordon. It is quite up to date and includes the recently discovered syphilis spirochæte. The technique is very clearly described and valuable additions are contributed by the translator and Drs. Houston and Horder. It is perhaps unnecessary to state that each of the "Manuals" can be purchased separately.

Books and Monographs Received

The Editor begs to acknowledge with thanks the receipt of the following books and monographs received:—

"Diseases of the Heart." Edited with Additions, by George Dock. 1908.——"Surgery, Its Principles and Practice." Vol. III. Edited by W. W. Keen. Philadelphia. 1908.——"Fibroma of the Uterus, Complicated by Disorders of the Heart and Kidneys. Uremia without Nephritis from Tumor Pressure." By Geo. Erety Shoemaker, Philadelphia. 1904.——"Protrusions of the Uterus in Nulliparous Women." By George E. Shoemaker, Philadelphia. 1907.——"Anorexia Nervosa in Children." By F. Forchheimer, Cincinnati, Ohio. 1907.——"Medical Specialism, with Especial Reference to Proctology." By Lewis H. Adler, Philadelphia. 1906.——"A Fatal Case of Cryptogenic Staphylococcus Bacteremia." By Christian R. Holmes, Cincinnati, Ohio. 1907.——"Etiology of Erysipelas. Its Relation to the Nasal Cavities and Its Destructive Effects upon the Eye." By C. R. Holmes, Cincinnati, Ohio. 1907.——"Deviations and Deformities of the Nasal Septum; with Special Reference to Possible Results Following the Submucous Operations." By Bryan De Forest Sheedy, New York. 1907.——"Hay Fever." By Bryan DeF. Sheedy, New York, 1907.——"Nasal Catarrh, Mouth Breathing, Hay Fever and Asthma." By Byran DeF. Sheedy, New York.——"Arterial Thrombosis and Gangrene Following Typhoid Fever." By John Norman Henry,

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Philadelphia. 1907.——"Purulent Cerebrospinal Meningitis Caused by the Typhoid Bacillus, Without the Usual Intestinal Lesions of Typhoid Fever." By J. Norman Henry and Randle C. Rosenberger, Philadelphia. 1908.——"The Treatment of Tetanus by Intra-Spinal Injections of Magnesium Sulphate." By John Norman Henry, Philadelphia. 1907.——"Paratyphoid Fever, with Report of Six Cases." By John Norman Henry, Philadelphia, 1905.

From the United States Department of Agriculture, Washington, D. C., the following:—"Report of the Secretary of Agriculture on The Southern Appalachian and White Mountain Watersheds." 1908.——"A Method of Breeding Early Cotton to Escape Boll-Weevil Damage." By R. L. Bennett. 1908.——"Results of Loco-Weed Investigations in the Field." By Albert C. Crawford. 1908.——"The Adulteration and Misbranding of Alfalfa, Red Clover and Grass Seeds." 1908——"Suggestions for Horse and Mule Raising in the South." By George M. Rommel.——"Experiment Station Work, XLIV."——"A Primer of Wood Preservation." By W. F. Sherfesee. 1908.——"Forest Tables."——"Western Yellow Pine." Compiled by E. A. Zeigler, 1908.——"Preservation of Piling against Marine Wood Borers." By C. Stowell Smith. 1908.

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Sajous's Analytical Cyclopædia of Practical Medicine.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

NOSTRUM PRESCRIBING: ITS CURE.

BY JOSEPH P. REMINGTON, Ph.M.

THE recent excitement, in medical circles, on the exposure of the nostrum evil, and the magnitude of the operations of those who manufacture and sell nostrums, has awakened a desire for more light on this subject.

The writer is not one of those who believe that the practice of prescribing nostrums, by physicians, is increasing; on the other hand, there are the best reasons for believing that many physicians, who were formerly indifferent or careless on the subject, are now thoroughly awakened, and they no longer practice the habit.

With persistent activity, on the part of the opponents of the nostrum evil, it is believed that their sale and use will be greatly curtailed. Very little benefit is going to be gained by a propaganda of abuse or personal villification; far more good will be accomplished by presenting to physicians a reasonable and effective alternative, with a campaign of education, which will present facts *alone,* and studiously avoiding sensational and exaggerated statements, intended to inflame public opinion, and terrorize the masses. The public mind is, of course, extremely sensitive upon the subject of the cure of disease. Health is the best asset of the human race, and confidence is a *sine qua non.*

When a layman's faith, in the ability of his family physician, is once shaken, the temptation is strong to try a widely advertised remedy, particu-

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larly when it is cheap, and the physician's fee can be saved. How many practitioners hear, from the lips of the patient, a statement like this, "Doctor, I have tried twenty different patent medicines, and none have given me relief, and now I come to you"; imagine the disgust of the patient upon finding that the doctor, to whom he turns for relief, simply prescribes another nostrum, and how begrudgingly such a one pays him for professional advice.

The old idea of mystery, in the preparation of medicines, lies at the foundation of the nostrum traffic. Science, with its enlightening spirit, is ever the foe of mystery and secrecy. Publicity, of course, kills secrecy, and that secrecy is not essential in securing commercial success, has been shown by the splendid example of that grand pioneer, whose name was known throughout the world as the maker of standard medicines, Dr. Edward R. Squibb. This sturdy opponent of nostrums, who has now passed to his reward, willingly published his processes, threw open his laboratory doors to the inspection of the medical and pharmaceutical professions, at a time when his competitors closely guarded their secrets, and yet, he died a rich man; rich not only in worldly effects, but far richer in the satisfaction that his labors had benefited a multitude, who reaped rewards from his work. It is gratifying to state that his example is now being followed by our best manufacturing pharmacists, and it gives me much satisfaction to state that the best and largest concerns in this country are giving freely, to the Committee of Revision of the United States Pharmacopœia, information which they have heretofore withheld, on the ground that these were commercial business secrets. With this spirit in the ascendant, how much hope there is in the future for the cultivation of the true scientific spirit. How can physicians encourage this spirit? The answer is, "by never prescribing a remedy the composition of which is not known to them," and surely, with the large number of non-secret preparations at their command, there can be no excuse for prescribing nostrums.

The cure then for nostrum prescribing is (1) education; (2) application and close study of the therapeutical effects of the preparations of the United States Pharmacopœia and National Formulary, and such unofficial agents of known composition as are now available. When the medical profession presents a united front and every doctor, before prescribing a remedy, demands from the traveling agent visiting his office, the formula of his product, and then sees that the agent has not evaded the issue, then, and then only, will nostrum prescribing cease.

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BUTTERMILK IN INFANT-FEEDING.

A Critical Study of Buttermilk and Its Preparation for Use.

By JOSEPH W. ENGLAND.

The use of buttermilk in the feeding of infants with gastro-intestinal disturbances is new in this country, although it was first employed in Holland by P. Campert in 1790, forgotten, and then revived by Ballot of Holland in 1865, in which country its use is exceedingly popular.

"Buttermilk," states Allen (Allen's Organic Analysis 4, 225), "is the secondary product of the manufacture of butter by churning milk or cream. Sour milk and either fresh or sour cream are the proper materials for making butter. Attempts to churn sweet milk have given very unsatisfactory results, about one-half of the total fat being left in the buttermilk. When the churning is conducted under proper conditions, the proportion of fat remaining in the buttermilk is generally above 0.5 per cent., but does not exceed 1 per cent., unless the operation of churning has been unskillfully performed. Salt is often added to cream in the warm season to preserve it, and this salt appears finally in the buttermilk. When the butter is collected, it is washed with cold water, and this water is generally mixed with the buttermilk, thus causing dilution. In cases heard in Scotland, it has been held that 25 per cent. of extraneous water in buttermilk is not an excessive or fraudulent proportion."

In New York City, states Piffard,[1] the old-fashioned country buttermilk, obtained by the churning of sour cream, in the production of butter, is not procurable. What is sold for buttermilk is a preparation of skimmed milk fermented with potato yeast. From this it is apparent that ferments are being used (instead of the lactic acid bacilli) for converting milk, with the result that a certain amount of alcohol is formed during the conversion of the milk. during the conversion of the milk.

The following method is used at the Philadelphia Hospital for making buttermilk:—

Pour one quart of fresh milk into a sterile pitcher and cover the top of the pitcher with a sterile towel. Let stand twenty-four hours at ordinary temperature (65°-70° F.), *and then skim off the cream.* The sour milk is then placed in a glass churn of one quart capacity and churned for fifteen minutes, after which it is removed from the churn and placed on ice until needed for use. It should be used within twenty-four hours.

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[1] American Druggist, 1908, 1 and 10.

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The lactic acid formed in the making of buttermilk results from the fermentation of the milk sugar by the lactic acid bacilli of the milk. The percentage of free acid varies with the number of bacilli, the temperature, and the length of time of fermentation. Vieth states that the average acidity of buttermilk is 0.8 per cent.; other authorities claim 0.5 per cent. or less. The composition of buttermilk varies according to origin. In dairy-buttermilk, the fat is usually 0.5 to 1 per cent., rarely more; the proteids 2 to 3 per cent., and the sugar of milk 3.5 per cent.

Artificial buttermilk may be made by the use of one of the various bacterial cultures for acidifying milk, such as Parke, Davis & Co.'s lactone tablets, which contain cultures of the lactic acid bacillus (Bacterium Acidi Lactici of the bacteriologists, or the Milchsauerbacillus of Hueppe). To use:—

Dilute one quart of fresh milk in a suitable container, with one-third of a quart of water, warm to body-temperature, add a pinch of table salt, and one lactone tablet that has been previously powdered, stirring the mixture well. Cover with a cloth, and let stand for twenty-four to thirty-six hours, when the buttermilk will be ready for use. Stir or shake the coagulated milk thoroughly. It should be smooth and not lumpy. Then place in an ice box until needed for use. Milk containing formaldehyde or other preservatives will not sour properly, as these substances kill or inhibit the action of the lactic acid bacilli.

In the artificial buttermilk made by this process, the fat is about 2.5 per cent., the proteids 2.5 per cent., and the sugar of milk 3 per cent., since diluted whole milk is used, and not skimmed milk. In other words, there is little difference between the composition of buttermilk so made and diluted whole milk, except in the reduction of the percentage of milk sugar and the presence of lactic acid; but the buttermilk is radically different from dairy-buttermilk *in a much larger percentage of fat,* which is so often a disturbing factor in infant-feeding, especially when the milk has been disorganized by fermentation, and the fat has become more or less coalesced. Of course, if desired, skimmed milk may be used in the above formula in place of whole milk.

Howard Childs Carpenter claims ("Buttermilk-Feeding," *Journal of the American Medical Association,* 1907, 1576) that his success with the use of buttermilk has been due not so much to the absence of fat as the great ease with which the proteid of buttermilk (casein lactate) has been digested, the infants being enabled to digest more than two or three times the usual quantity. But, it seems reasonable to believe, that one of the chief features of value in buttermilk is its *low* percentage of fat. If a fatty mixture be given with free acid (as with buttermilk made from whole milk), excessive

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hydrolysis of the fat in the human stomach can readily take place, with resulting fatty indigestion.

Morse and Bowditch (*Archives of Pediatrics,* December, 1906) state that the good results obtained with buttermilk are due to their low fat content in combination with a large amount of proteid in an easily digestible form, and not to the acidity, or to the action of the bacteria.

The increased digestibility of the proteid is doubtless due not so much to the fact that casein lactate is present, as to the fact that the curd has been more or less mechanically flaked by the starch of the flour used to prepare the mixture; but that lactic acid is not without influence is shown by the experiments of Kitasato, who has found (Sternberg's "Bacteriology," 1896, 178) that the bacillus of typhoid fever is killed in five hours by a solution containing 0.4 per cent. of lactic acid, and the cholera spirillum by 0.3 per cent.

There are various methods of preparing buttermilk for infant use. Fischer ("Diseases of Infancy and Childhood," 1907, 183) advises the following formula:—

Mix one even tablespoonful of rice, wheat, or other flour with one quart of buttermilk, and cook in a *single* boiler, with constant stirring, for about twenty-five minutes, *or until it has boiled up three different times,* and then add two or three tablespoonfuls of cane-sugar or beet-sugar. (Use enameled ware for preparing the food.) When prepared for use it assumes a yellowish color. It is necessary to use wide-mouth bottles for the food, as it coagulates and gets lumpy, and requires occasional shaking to bring the thickened portion to the proper consistency.

Carpenter uses a somewhat similar formula, employing wheat flour, three and three-quarter teaspoonfuls; granulated sugar fifteen teaspoonfuls; buttermilk, one quart, as follows:—

Make a smooth paste of the flour and sugar with a small quantity of the buttermilk, and add the balance. Then cook the mixture in a double boiler to 212° F., *but it must not be boiled, or it will curdle;* it is essential, also, that the milk be constantly stirred during the entire process, or it will curdle. If the thermometer is not used, the milk should be removed from the fire *at the first sign of bubbling,* and rapidly cooled. Then bottle, or keep in a pitcher or jar which has been scalded and place on ice. Before using, the buttermilk mixture must be carefully stirred, as on standing it separates and the flour falls to the bottom of the vessel. It will be noticed that no water is added to the mixture.

Another method is one reported to the writer by J. Madison Taylor, as follows:—

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Cook one shredded wheat biscuit (weight, 1 oz. av.) with one quart of water in a double boiler for fifteen minutes; remove from the fire, add one tablespoonful of cane-sugar and one pint of buttermilk; mix and strain. This formula is intended for a three-months-old child; for a six-months-old child, use two shredded wheat biscuits, one quart of water, one quart of buttermilk, and two tablespoonfuls of cane-sugar. "This formula," states Taylor, "is of especial value after gastric derangements from condensed milk-feeding, and feedings of alkalinized milk, and fairly suitable when economy is demanded as in out-patient clinics."

The writer of this paper cooked one shredded wheat biscuit with one quart of water, by direct heat, for one-half hour, and strained through cheese cloth. There was quite a residue that could not be expressed through the cloth, and the strained portion, examined microscopically, was found to contain large numbers of *unruptured starch grains,* thus showing its inferiority as a milk modifier.

The best results were apparently had by the use of the following formula:—

Mix four rounded teaspoonfuls of a prepared cereal mixture[2] with sufficient cool water to make a smooth, thin paste. Then add three-quarter pint of hot water and cook forty minutes in a *double boiler* (preferably), keeping the water in the outer vessel constantly boiling, or boil for fifteen minutes in a *single boiler,* stirring constantly. Remove from the fire, add enough boiling water to replace that boiled away, and add three-quarters pint of buttermilk. Then put in nursing bottles and keep in an ice-box. For use, heat a bottle until the liquid is of body-temperature.

This formula is intended for a three-months-old child; for a three to six-months-old child, use two and one-half rounded tablespoonfuls of the prepared cereal mixture, one pint of hot water, and one pint of buttermilk. For older children use four rounded tablespoonfuls of the cereal mixture, one pint of water, and two pints of milk.

Clean dairy-buttermilk should be used, or the buttermilk should be made from skimmed milk by the use of lactone tablets, or by the Philadelphia Hospital formula.

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[2] The prepared cereal mixture was in the form of Eskay's Food, which contains barley, oat and wheat flours, made into a dough with water, heated at 350° F. for a number of hours until all the starch grains have been ruptured, and sugar of milk.

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It will be noticed that, by the Fischer formula, the flour and buttermilk are boiled together; that, by the Carpenter formula, the flour and buttermilk are cooked, but *not* boiled; and that, by the Taylor formula, the wheat biscuit and water are first cooked, and then the buttermilk is added. The last procedure is the preferable one, because the starch grains are thereby more largely ruptured, and there is no hydrolysis of the sugar of milk by free lactic acid with the formation of glucose and the isomeric carbohydrate galactose. The presence of readily fermentable carbohydrates in fermentative conditions of the gastro-intestinal tract would appear to be especially objectionable.

But, by the use of the last formula, with the prepared cereal mixture none of these objections obtain, because all the starch grains have been ruptured, and made available for use in modifying the buttermilk; because its milk is not hydrolyzed by acid, and because it supplies additional milk sugar to compensate for that lost by dilution and bacterial action.

The value of buttermilk in infant-feeding lies chiefly in the treatment of certain pathologic conditions, such as intestinal indigestion, enteritis, and marasmus, and never as a routine measure. During the lactic fermentation of milk, the casein (calcium-casein) is first changed into calcium lactate and free casein, and then the latter is changed into casein lactate, as the researches of Van Slyke and Hart have clearly shown.

The routine use of buttermilk is objectionable, because the casein of the milk has been decalcified, and changed into casein lactate curd, which, while soft and gelatinous, is not the chemical form of casein normally produced with human milk; that is, free casein, the formation of which in the stomach of the infant is absolutely essential for the proper development of the chemical functions of the infant stomach.

The introduction of an acid-food into the stomach of a *healthy* infant eliminates the necessity for the production of the acid gastric juice, and more or less gastric atrophy results; and while this latter condition may be apparently removed by the continued use of the buttermilk, an abnormal physiological condition will become established. In the treatment of gastric atrophy (where there is a deficient supply of gastric juice of deficient acidity) the temporary use of buttermilk has yielded, it is true, excellent results; but when the infant's digestive system has become accustomed to buttermilk-feeding, and a change is made to *sweet* milk, diarrhœa results, showing that an abnormal physiological condition has been created. The acidity of the gastric juice of nurslings is usually 0.1 to 0.2 per cent.; that of buttermilk from 0.5 to 0.8 per cent.

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A CASE OF NEPHRO-URETERECTOMY FOR TUBERCULOSIS.

By THEO. A. ERCK, M.D.,
PHILADELPHIA.

Associate in Gynecology, Philadelphia Polyclinic College; Assistant Surgeon, Gynecean Hospital, etc.

Those of us who have been active in gynecological and abdominal surgery during the past fifteen years, cannot fail to be impressed with the advances made in methods of diagnosis and treatment applied to conditions induced by tuberculosis and other diseases of the kidneys. These methods have been slowly and carefully developed, taxing the mechanical ingenuity and chemical and bacteriological knowledge of investigators, but, even to-day, it will at times become necessary to make an incision over a healthy kidney in order to determine its presence and exact condition, before proceeding to operation on the diseased part. It is not my object to review the steps which lead to our present knowledge in this respect, but rather to call attention to the fact that the good results already obtained by surgery in dealing with this condition, can still further be improved if we learn to make diagnoses early, and to recognize the fact that surgery offers the only real hope. It is claimed by various writers that in 90 or more per cent. of cases tuberculosis occurs primarily in one kidney. Unfortunately the kidney may, at times, be almost entirely destroyed before producing marked symptoms calling the patient's attention to the condition, but even so, as long as marked bladder involvement is absent, and the other kidney healthy, the results of nephro-ureterectomy are highly gratifying.

I have operated on only one case, but have assisted in two others, one of recent development and one of long standing, and have had a patient under my care who lived for two years after a nephrectomy, his second kidney being already involved at the time of the nephrectomy. The suffering it was my lot to witness, was greater than any I have seen in my whole career. It will always make me favor operation in tuberculosis of the kidney, if it causes similar suffering, even if such patients assume great risks owing to possible lung involvement. Tuberculosis of the kidney, from the time of its recognition, should be considered a surgical disease. In spite of the good results from the modern treatment of pulmonary tuberculosis, there is, so far, no evidence that the same treatment is of the slightest benefit in renal tuberculosis. It is fair to assume that in all cases only one kidney is primarily attacked. The unfortunate latency of the disease in some cases makes it, of course, impossible to diagnose it early in all instances, but in the large majority symptoms develop

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early and urge the patient to seek the physician. I have nothing new to add to our knowledge of the etiology, pathology, or symptomatology, but would like to call attention to a technic by the employment of which the kidney and ureter can be readily and easily removed through an anterior incision, the operation being retro-peritoneal. This technic also affords an opportunity to assure oneself of the presence and condition of the other kidney, without necessitating a second incision. It is well known that in spite of the ingenious mechanical methods of diagnosis, the only kidney a patient possessed has been removed (Edebohls cites three such cases); besides, the occasional so-called horse-shoe kidney offers another argument for the necessity of making sure of the presence of another kidney before resorting to nephrectomy. About the desirability of removing the ureter when the kidney is tuberculous, there can be no doubt, provided the patient's condition permits it, as the convalescence and ultimate recovery of the patient has been more rapid and complete when the ureter has been removed than when even a part of it has been left behind. The ureter is usually tuberculous and causes trouble, as numerous reports of operation for its removal at a secondary operation attest.

The case I wish to report had the following history:—

Miss M. J., aged 29, consulted me in August, 1906. She had never been seriously ill. For several years she had nursed a sister who had died six months previously of pulmonary tuberculosis. She complained of frequent urination, with intense pain and tenesmus. She had passed blood per urethram freely on several occasions. This began six weeks ago. Her evening temperature varied from 101 to 103, and in the morning it was usually subnormal. She looked ill and emaciated, had lost 34 pounds in two years, her present weight being 106 pounds. Physical examination of heart and lungs was negative. The urine was turbid, highly acid; specific gravity, 1026; contained much pus, although no casts. A cystoscopic examination showed a marked area of inflammation surrounding the right ureteral orifice. The left ureteral orifice was normal. The electric cystoscope failed at this juncture, so that catheterization of the ureters could not be proceeded with. Vaginal examination showed a normal condition of the uterus and appendages; the right ureter was thickened and easily palpated. Subsequent abdominal examination disclosed tenderness in right kidney, the lower pole of which could be plainly felt; there was tenderness along the course of the right ureter. The left kidney could not be felt, nor was there any tenderness along its ureter. Tubercle bacilli were found in the urine only after repeated examination. A diagnosis of tuberculosis of right kidney was made and nephrectomy advised. The patient next came under the care of Dr. R. G. LeConte, who made a cysto-

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scopic examination and catheterized the ureters. He very kindly sent me the report from the Ayer Clinical Laboratory, as follows:—

Miss M. J., December 4, 1906. Tubercle bacilli present in specimen of catheterized urine from right kidney. December 6, 1906. Guinea pig, black, inoculated with 4 cubic centimeters of centrifugalized urine injected into peritoneal cavity. January 10, 1907. Guinea pig killed; much emaciated. Post-mortem shows extensive tuberculosis of the peritoneum.

The patient entered the Gynecean Hospital and operation was performed December 14, 1906. I decided to follow the technic described by Dr. Edward Reynolds, of Boston, in an article in *American Medicine*, of February 25, 1905. The patient was placed upon her left side with her legs extended, gravity thus causing the abdominal walls and viscera to sag away from the right side. An incision, four inches in length, was made in the linea semilunaris. This incision included all the layers of the abdominal wall, beginning about one inch from the costal margin, down to the peritoneum. When this was reached it was stripped from the abdominal wall with the fingers until the perinephritic connective tissue and fat were reached. These were opened freely and the kidney exposed, breaking up all the adhesions, so that the kidney, renal vessels, and upper portion of ureter were well exposed. The vessels were ligated *in situ* and cut, and the kidney delivered. The ureter was now further exposed by stripping the peritoneum toward the median line, and thus readily traced across the pelvic brim and the lateral pelvic wall into the broad ligament. A Sim's speculum used as a retractor in the lower angle of the wound, aided materially in obtaining access to this part of the ureter. It was dissected out along its entire course and through the broad ligament. By making slight traction on the ureter it was readily traced to its insertion in the bladder wall, where it was ligated and cut between two catgut ligatures, the stump being inverted in the manner of inverting the stump of the appendix, with several stitches of catgut. The large wound was now examined for bleeding points and loose tissue. As the patient was rolled over on her back the peritoneum and intestines rolled back and obliterated the large cavity. The abdominal incision was closed, leaving a small gauze drain in the lower angle of the wound. The patient made a prompt recovery; she left the hospital three weeks later. During the year which has elapsed since her operation, she has resumed her work. She has gained sixteen pounds in weight, and an examination of her urine, made two weeks ago, shows an absence of anything pathological. The report of the examination of the specimen, made by Dr. E. Schumann, is as follows:—

Diagnosis.—Caseous tuberculosis of kidney and ureter.

Specimen consists of the right kidney and ureter.

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The kidney measures 10 x 6 x 4 centimeters, is dark red in color, soft in consistency, and shows some adhesions. The capsule strips with difficulty. The surface of the kidney is undulating, showing the presence of abscesses beneath the surface.

Upon section the cortex of the organ is studded with abscesses, the largest 2 centimeters in diameter. The cortex is somewhat thickened and congested. The pelvis of the kidney is congested, but otherwise normal. The ureter is hard in consistency, measuring 7.5 millimeters in its greatest diameter. On section all the walls of the ureter are hypertrophied.

Microscopic Changes.—The entire kidney tissue shows the changes of long-continued tuberculosis. There is universal degeneration of the secreting tissue. Large areas are caseous, miliary tubercles, with giant and epithelial cells, cloudy swelling of the glomeruli and tubules, with several areas of suppuration and necrosis. The ureter shows inflammatory hypertrophy of its walls with well-marked miliary tubercles scattered throughout its substance.

The Therapeutics of Diseases Which Involve the Internal Secretions.

THE APPLIED THERAPEUTICS OF THYROID PREPARATIONS.

By CHARLES E. de M. SAJOUS, M.D.,
PHILADELPHIA.

(Continued from the March issue.)

CHRONIC PROGRESSIVE RHEUMATISM.

Under this caption, Léopold-Lévi and de Rothschild describe the phenomena observed in two cases of chronic rheumatism, with hydrarthrosis, in which thyroid extract proved of distinct value. In one of these the hydrarthrosis followed a fall from a bicycle, and was the precursor of attacks of muscular rheumatism, all the joints being gradually involved in the morbid process. Notwithstanding seasons at Aix-les-Bains, Dax, and other stations, the patient became quite impotent, having even to be fed. The usual remedies proved unavailing, though aspirin and iodine seemed, at least for a while, to be of some benefit. The patient's condition becoming steadily worse, thyroid extract was tried, beginning with 1½ grains every other day during ten days, followed, after five days, by resumption of the remedy; then giving again only

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1½ grains every other day. This dose was gradually increased until, eleven months later, the patient was taking 7½ grains, in divided doses, daily.

The beneficial effects of the drug become self-evident when its action and the pathogenesis of chronic rheumatism are interpreted from my standpoint. Briefly, while I have ascribed[15] this disease to "inadequate catabolism of tissue wastes, and excitation, by the toxic products formed, of the vasomotor center" thyroid extract, as stated in the foregoing pages, enhances general oxidation and the destruction of wastes, by increasing the blood's asset in auto-antitoxin.

Increase of appetite was the first effect noted; this is a normal result, since the greater cellular activity and catabolism created a greater demand for foodstuffs. *Increased heat production* soon replaced the marked and constant chilliness from which the patient suffered—an effect due to the marked increase of oxidation the thyroid extract engendered throughout the body. The dose was increased to 1½ grains one day, then to 3 grains the next, this being continued ten days. After a period of rest of five days, 3 grains were again given daily. The *pain became less*—a fact due to decrease of the vascular tension, owing to increased destruction of the toxic wastes which, as I have pointed out elsewhere,[16] excite the vasomotor center, thus causing constriction of all arteries. The sensory nerve-terminals being relieved of part of the hyperæmia which caused the pain, the latter became less marked in proportion. Closely connected with this beneficial action was the effect on the joints, viz.: the *hydrarthrosis became reduced.* Being also due to excessive vascular tension, it is plain that by causing vaso-dilation, in the manner just explained, thyroid extract caused the excess of fluid to leave the joints. The dose being still further increased until 7½ grains were taken daily, *emaciation* occurred—a well-known effect due to excessive catabolism provoked by large doses of thyroid extract.

Eleven months' treatment brought the patient back to a condition of comfort, the joints having resumed their shape and flexibility—with the exception of one knee, which remained anchylosed—owing doubtless to fibrosis, a condition beyond the reach of the remedy. This does not militate against its use, however; it simply shows that the treatment was resorted to too late to avoid irremediable organic lesions. The authors, in fact, refer to a case treated by Parhon and Papinian,[17] in which thyroid extract had produced, though the disease was of twenty-four years' standing, "a true regeneration." When 7½ grains (in five divided doses) daily had been given some time, palpitations, tachycardia, and arhythmia appeared. On withdrawing the remedy these un-

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [15] page 1869; [16] page 1429 *et seq.*; [17] Parhon and Papinian: Presse Méd., No. 1, p. 3, 1905.

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toward effects ceased, but recurred as soon as its use was resumed. This affords additional evidence in support of a fact I have often emphasized,[18] viz.: that the beneficial effects of thyroid extract are obtained only when small doses are used. Large doses are dangerous, owing, as shown by Cyon, to their sensitizing influence on the depressor nerve and the resulting cardiac arrest.

DISORDERS OF PREGNANCY.

As already stated, pregnancy is attended with an increase of toxic wastes in the blood, those of the mother being supplemented by those of the fœtus. At this time, therefore, there is a marked increase of activity of the adrenal system in order to insure adequate conversion of the excess of wastes into end-products that are readily eliminated by the kidneys, intestines, and skin. Out of twelve women who suffered from migraine before pregnancy, observed by Léopold-Lévi and de Rothschild, the attacks ceased after conception. The authors also refer to two cases of *chronic rheumatism* complicating pregnancy, in which the same phenomenon occurred, and cite a similar observation by Schwab. Nicolas[19] found that *asthma* due to wastes was influenced in the same way by pregnancy (32 cases) in about 50 per cent. of all cases, while Ley,[20] on the other hand, found that thyroid extract arrested this form of asthma. This further confirms all the statements previously made, inasmuch as thyroid extract counteracts all three disorders.

INFECTIOUS TONSILLITIS.

Out of 95 cases of thyroid insufficiency observed by them, Léopold-Lévi and de Rothschild noted recurrent acute tonsillitis in 26 instances. They explain this fact by Vincent's conclusion [21] that the thyroid regulates the production of defensive substances in the blood—a fact which I pointed out over three years before this investigator.[22] By increasing the proportion of auto-antitoxin and thyroidase (opsonin) in the blood, thyroid extract antagonizes the tendency to tonsillar infection—and its occasional consequence, rheumatism—the defensive activity of the tonsillar fluids and phagocytes being also enhanced in proportion.

NEURASTHENIA.

This disease is now generally recognized as a vasomotor neurosis, the most prominent feature of which is relaxation of all arteries. In the light of my

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"Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [18] page 1144.

[19] Nicolas: Rev. Méd. de Mont Dore, April, 1906.

[20] Ley: Jour. de Neurologie de Bruxelles, Vol. VI., p. 167, 1905.

[21] Vincent: Bull. de la Soc. méd. des hôp. de Paris, June 8, 1906.

[22] "Internal Secretions and the Principles of Medicine," Vol. I., 1903, and Philadelphia Medical Journal, March 7, 1903.

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own investigations[23] this is mainly due to exhaustion of the sympathetic center and to the resulting relaxation and loss of propulsive activity of the arterioles. The tissues being thus imperfectly oxygenized and nourished, there ensues mental torpor, habitual fatigue, adynamia, gastro-intestinal atony, etc. Now, to the "hepatic neurasthenia" of Léopold-Lévi, the "biliary neurasthenia" of Gilbert and Lereboullet and the "adrenal neurasthenia" of Dufour, Sergent, Vassale, and others, the authors add a fourth: "thyroid neurasthenia," in which the main symptoms are gastric: dilatation, hypochloridia, dyspepsia, etc., besides headache, chilliness, general asthenia, loss of hair, and a tendency to melancholia. In such cases, Léopold-Lévi and de Rothschild obtained excellent results with thyroid extract in small doses.

As interpreted from my standpoint, these refinements of diagnosis are not necessary, and I have found 1 grain of desiccated thyroid three times daily very effective in such cases, especially when given in combination with strychnine ($^1/_{40}$) and iron, preferably Blaud's pill. The beneficial effects are accounted for by the increased nutritional power of the blood, the thyroid being greatly assisted in this by the strychnine, which, by exciting the adrenal center, enhances general oxygenation. The sympathetic center and the muscular layers of the arteries being better nourished, they soon recover their tone, thus restoring normal circulation, which means in turn, restoration of health.

GENERAL CONCLUSIONS.

The foregoing evidence not only illustrates the value of small doses of thyroid extract in a series of conditions in which it has been but little tried so far, but it emphasizes also the correctness of my conclusions concerning the physiological rôle of the thyroid secretion—as represented by the extract—in the body. The increase of general oxygenation, metabolism, and nutrition witnessed, previously unexplained, assumes a normal aspect when the stimulating action of this agent on the adrenal center and the increased production of adrenoxidase this provokes, is taken into account. In fact, it is now possible to predicate the disorders in which thyroid extract will prove useful:—

1. In diseases due to slowed destruction of toxic wastes as shown by its action in tetany, epilepsy, eclampsia; disorders of menopause, asthma, chronic rheumatism, migraine; and also by those due to slow oxidation of fats, as in obesity and Dercum's disease: adiposis dolorosa.

2. In diseases due to lowered general nutrition of all tissues, including the bones, as shown by its action in cretinism, myxœdema, and kindred disorders—osteomalacia, rickets, and osteomyelitis.

[23] "Internal Secretions and the Principles of Medicine," 1st Ed., Vol. I., 1903; Vol. II., 1907: [23] page 1866.

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3. In disorders due to lowered nutrition of the muscular elements, including the skeletal and vascular muscles, as shown by its action in general adynamia, neurasthenia, and myasthenia.

4. In all cases in which the processes of repair or absorption are deficient, as shown by its action in delayed union of fractures, certain benign and malignant neoplasms and syphilitic tissue and bone necrosis.

5. In infectious diseases—owing to the increase of auto-antitoxin, thyroidase (opsonin) and phagocytes—as shown by its action in tuberculosis, typhoid fever, infectious tonsillitis, and certain exanthemata.

Editorial

THYROIDECTOMY IN DEMENTIA PRAECOX.

In mid-December of the past year, a highly sensational account of certain operations on the thyroid gland, for the relief of dementia præcox, appeared in one of the Baltimore daily newspapers, the source being one of the house-staff of the City Detention Hospital, who published the same with entire disregard of the code of medical ethics.

This account was copied by the Associated Press, and in various forms found its ways into numerous lay journals, both in this country and in Europe. It naturally attracted widespread attention, and, from the character of the statements made, was well calculated to mislead and do harm, purporting, as it did, to be a cure-all for dementia præcox.

An attempt to correct the erroneous statements made in the newspaper article was inserted in the current number of the *American Journal of Insanity*, by request of the editor of that journal; but from the limited field of the publication it, so far, has not accomplished the desired effect, hence the following statement:—

For nearly two years the writer has carried on an investigation looking to the cure of that distressing form of dementia præcox known as catatonia. No appreciable result followed the trial of numerous drugs and animal extracts until in February, 1907, we found that the administration of very small doses of thyroid extract, alternated with an alcoholic solution of lecithin, induced decided effect in very early cases of the malady, and three cures resulted.

In more advanced cases this treatment was without avail; and, when a summary of the motor symptoms of the malady showed some resemblance between Graves's disease and catatonia, it was considered justifiable to at least

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try the effect of a partial lobectomy in one or two cases, taking care to spare the parathyroid glandules. Dr. Richard H. Follis, Visiting-Surgeon to the Detention Hospital, performed all the operations.

Two comparatively early cases were selected, and the first operation was done on June 26, 1907. The patient was a girl of 19 years, and about four-fifths of the right lobe of the thyroid gland was removed. The reaction that followed was as great as is ordinarily seen after similar operations in the Graves's malady, and after a number of weeks the girl recovered her mental health, and has not relapsed.

The second case, a young man, was partially thyroidectomized on July 3rd. With him the after-reaction was also great, the pulse rate becoming high, and the sweating profuse. He also made an excellent recovery and has not relapsed.

A third case of well marked catatonia, a black female, was thyroidectomized in November. She recovered and has not relapsed.

The fourth case, one of considerably greater duration than the others, was also lobectomized in November, and at first promised to do well, the faculty of speech and intelligent interest in surroundings returning to some extent; but after a time he gradually relapsed into his former condition of negativism with mutism. In this instance but a small portion of the right half of the gland was removed; later, a second portion of the gland was ablated, but improvement was not very decided, though sufficient to allow him to be about the ward and to feed and clothe himself.

The fifth case, a man, also at a comparatively early period of the malady, was operated on toward the end of December, and did well, his ability to reason intelligently returning much more quickly than in the first cases.

Cases six, seven, and eight were operated on in February, and were typical though old cases of the malady, the duration of the mute stage in none of them being less than a year. Two of them were girls; the other one, a man. None of these cases showed any considerable change a week after the operation, nor have they done so since.

The pathological examination of the removed portions of the glands by Dr. McCallum, showed, in the first one lobectomized, a condition analogous to colloid goiter, in the second a state similar to that found in early exophthalmic goiter, while the others were practically normal. The iodine content was also normal.

The small number of cases operated on leaves the question, at this time, entirely inconclusive as to the value of partial thyroidectomy in catatonia. One point is, however, cleared up, viz.: that the operation is not permissible

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in other than very early cases, before the organic changes that, we know, take place in the brain cells begin. Certainly no operation should be undertaken at a later period than the beginning of the stage of mutism, and even then not without the advice of a skilled alienist, and the assent of an experienced surgeon who has been trained in the school of exophthalmic goiter cases. In other words, the operation is far from being devoid of danger, and should not be done in any event without full appreciation of these dangers.

It is possible, and only possible, that in catatonia we have to do with a functional perversion of the secretion of the thyroid gland; also that the operation induces a return to the natural secretion of this ductless body. The partial ablation of the gland may also induce unknown changes in the general metabolism of the entire body, produced, first, by the high leucocytosis that immediately follows the operation, and, secondly, through the partial annulling of the thyroid harmone. In all the patients that have had a sufficient time to fully recover, a marked change in the general nutrition was superinduced, both after the thyroidectomy and thyro-lecithin treatment, so that after the lapse of four or five months there has been the enormous gain of from 40 to 50 pounds in weight, and this not confined to the adipose tissues, but equally apparent in the muscular structures. None of the patients have shown any traces of myxœdema.

HENRY J. BERKLEY*

* Clinical Professor of Psychiatry in the Johns Hopkins University.

DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.

WHEN the diagnosis of extra-uterine pregnancy is made the condition must be looked upon as fraught with very grave consequences to the patient, unless proper therapeutic measures are adopted.

While it must be conceded that very many patients with ectopic gestation may recover under an expectant treatment, after the gestation has begun to show symptoms of interruption, great care must be exercised in selecting cases in which such treatment may be justifiable. Expectant treatment may be practised when there is reason to believe that a *complete* tubal abortion has occurred, and the hæmatocele produced by it is of moderate size; and when the patient is under constant observation in an *institution,* where immediate intervention by a competent surgeon may be secured. Furthermore, the subjective symptoms should improve to a greater or lesser extent from day to day. Should there be an aggravation of the symptoms, as shown by renewed attacks of pain,

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or an increase in the size of the hæmatocele, longer delay of operation is hazardous and under no circumstances justifiable.

The abdominal operation should be chosen. Vaginal operations for ectopic gestation, in my present view, are justifiable only if the gestation sac is still intact and of small size, and if there is no evidence of adhesions. In many instances of well-formed encapsulated retro-uterine hæmatoceles, vaginal section is preferable to an abdominal operation; but in many other cases the abdominal route is preferable.

Those who have done many operations for ectopic pregnancy will undoubtedly admit that they have operated on some patients who would very likely have recovered without operation. It must be allowed, however, that with our present low mortality rate, in the hands of competent operators, the patient were safer with operation than without.

The subject of treatment is much too large to do justice to it in a few brief remarks.

A general rule is, however, that the quicker a woman with ectopic gestation is operated upon, the better are her chances for recovery. Furthermore, with few exceptions, the operations should be done by the abdominal route, and the element of time be considered as important. A quick operator's patients have a better chance than have those of a slow operator. A careful peritoneal toilet is not desirable; remove the large blood-clots that are readily accessible and close the abdomen *without drainage*.

H. J. Boldt.

THE TREATMENT OF INTRAPERITONEAL HAEMORRHAGE FROM RUPTURE OR ABORTION OF TUBAL PREGNANCY.

The time is ripe for such a symposium, as the view is too prevalent that a woman the subject of tubal pregnancy, that has undergone rupture or abortion, would die from intraperitoneal hæmorrhage if not operated upon posthaste. Many lives, doubtless, had been sacrificed from the practice which that view entails.

Tubal abortion and tubal rupture are attended with a variable degree of intraperitoneal hæmorrhage, and in the vast majority of cases (roughly speaking, about 95 per cent.) the amount of blood effused into the peritoneal cavity does not directly endanger the life of the patient. But in about 5 per cent. of the cases under discussion the amount of blood effused is so great that the whole abdominal cavity is inundated with blood, and the abdomen being enormously distended, the diaphragm is pushed up to its greatest extent,

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crowding the heart and lungs so as to interfere with their action, and placing the patient's life in the greatest jeopardy or killing her outright within a time varying from one to twenty-four hours. These have been termed the tragic cases, but perhaps the term "cataclysmic" would be a more appropriate one.

In operating on these cases it is like cutting through the abdominal wall of a corpse, the tissue being practically bloodless. As soon as the peritoneum is reached it is found to be of a very dark color and bulging outward, and when incised the blood spurts out with considerable force.

I fear cases are frequently described as belonging to this class, when, in fact, they are nothing more than instances of copious or even moderate intraperitoneal hæmorrhage with attacks of marked syncope.

How are the two classes of cases to be differentiated? As a rule this can easily be done by the behavior of the pulse. In the non-cataclysmic cases the pulse will show improvement in the course of a few hours, while in the cataclysmic cases the pulse remains the same or grows more rapid and more imperceptible with the lapse of the hours.

There is a pretty general unanimity of opinion as to the treatment of the non-cataclysmic cases. They may be operated upon as soon as the syncopal attack passes over or, what is preferable, the operation may be deferred for a few days to give time for the preparation of the patient and to suit the convenience of the operator.

The bone of contention regarding the time of operation seems to be formed by the cataclysmic cases, whether they should be operated upon at once or operation be delayed for one, two, or three days, until reaction has set in, as advocated by Hunter Robb of Cleveland, or to wait still longer (for several weeks) until the reserve force is built up, the patient being kept in a state of hibernation with morphine, and the most absolute rest, as advocated by F. F. Simpson of Pittsburg.

The latter proposition, that is to wait for several weeks (forty-five and forty-seven days respectively, in two cases), can be readily dismissed as not calling for serious consideration. The other proposition, that is to wait for twenty-four or forty-eight hours until reaction has set in, is worthy of our closest attention.

The writer is in favor of immediate operation in these cases, so far as he, himself, is concerned. In 81 cases of ectopic pregnancy, operated upon by him during the past ten years, there were 18 cases with copious intraperitoneal hæmorrhage; of these only 6 cases should be put in the class which he has termed cataclysmic. There was only one death in the entire series of 81 cases, and that was in a case with only moderate intraperitoneal hæmorrhage, who died twenty-one days after operation as a result of ether pneumonia.

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All of the cataclysmic cases were operated upon immediately or within a few hours, and all responded promptly with the aid of intravenous effusion of physiological salt solution.

In one case he was forced to operate hurriedly with only the kit of instruments at hand, which he carries for a curettage, and without sufficient assistance. Still, the patient made a smooth convalescence, and had primary union of the abdominal wound.

In another case, on the advice of a consultant, he waited for four hours, but the patient steadily grew worse. The same consultant agreed that further delay would destroy what little chance the patient had, and the operation was done without further delay. The entire abdomen was enormously distended with blood, the operation proved to be a very difficult one, as the cataclysmic event occurred after an examination of a pelvic hæmatocele, to which the intestines and pelvic organs were extensively adherent; nevertheless the patient made a satisfactory recovery.

A case like that ought to be a sufficient answer to those who oppose immediate operation from the danger they say of adding shock to shock.

HIRAM N. VINEBERG.

HAEMORRHAGE FROM AN ECTOPIC PREGNANCY.

THERE is no doubt that in the great majority of cases the hæmorrhage from an ectopic pregnancy stops spontaneously. Neither is there any doubt that there are some cases in which the bleeding does not stop spontaneously and the patient dies from hæmorrhage. In a given case, with a reasonable certainty that the bleeding is still going on, shall we operate at once or shall we wait, hoping that the case will be one in which the bleeding will stop? If the patient is in such condition that she will probably stand the operation, my judgment is that the sooner the operation is performed, the better it is for the patient. There are, however, some patients that are in such condition when seen that they would be given a better chance by waiting than if operated on at once. In my experience, these cases are not common. In regard to the quantity of blood that may be lost and the patient recover, there is undoubtedly a difference between the percentage of blood that may be removed from an animal experimentally, and that which a woman may lose and retain, possibly under pressure, within the abdominal cavity. It is possible that the improvement that is often noticed directly the abdomen is opened in cases of ectopic pregnancy is due to the relief of the intra-abdominal pressure or the removal of some of the blood-clots.

HOWARD C. TAYLOR.

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Cyclopædia of Current Literature

ANTHRACITE COAL ASH AS A SURGICAL DRESSING.

The use of anthracite coal ash as a surgical dressing is recommended by the writer in cases in which frequent changes of dressings are necessary, and in which the question of expense is of importance. It is readily obtainable, is neutral in reaction, and on careful analysis is found to contain no irritating substances. When freshly taken from the furnace it is aseptic, though not antiseptic. The only preparation required is sifting through a flour sieve; it can then be put on a piece of well-washed cloth, which is folded over it, making a poultice, which can be rapidly prepared and will be found soft, compact, and absorbent. It is readily molded to any part, and, while not so quickly absorbent as gauze, it draws the pus better up into the pad instead of spreading it over the skin as gauze frequently does. The writer concludes that in cases in which gauze cannot be obtained or the expense is too great, ash pads form a good substitute. In freely discharging sinuses and suppurating wounds the discharge will be well taken care of. When the discharge is thick and gummy, or when weight and bulk of dressing is contraindicated, they should not be used. They are particularly applicable to discharging wounds of the axilla, popliteal space, and palm of the hand, because they fit snugly and tend to splint the part. They are also well suited to varicose ulcers and discharging sinuses of the abdomen. W. Irving Clark, Jr. (Journal of the American Medical Association, March 14, 1908).

ANTIMONY.

The writer puts in a plea for antimony and potassium tartrate, a remedy of great value, which has been strangely neglected of late years. With the present views the salts of antimony should not be prescribed with any desire to produce a profound sedative effect upon the vascular and muscular systems, but we should limit our efforts to obtaining free secretion from the mucous surfaces and the skin. For this purpose antimony remains pre-eminent, but it should always be prescribed in small doses given frequently, for it is only by this means that its full effect can be obtained without any danger of lowering the patient and giving rise to unwelcome signs of depression. In cases of bronchial catarrh and bronchitis there is no drug to take its place. Great severity in the attack is no bar to the use of the drug. In the early stage of broncho-pneumonia in children it is of undoubted value, being most useful at the period when the consolidation is still in patches. Belladonna is also of value at the same period, and the two remedies may be combined. Laryngitis stridulus is another disease in which antimony is of great benefit; it should be given as wine of antimony in doses of 15 to 20 drops, so as to induce a slight feeling of nausea. Hot fomentations to the throat aid materially. Very small doses of antimony act as a gastric sedative, and are also of value in inflammatory conditions of of the skin, especially in eczema. To its quality as a hepatic stimulant antimony owes its inclusion in "Plummer's pill," where it is combined with calomel and guaiacum. E. Smith (British Medical Journal, February 29, 1908).

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APPENDICITIS IN INFANCY AND CHILDHOOD.

The fatality of appendicitis occurring in infancy and childhood has been overestimated. In the writer's series of 82 cases there was a mortality of 12 per cent. Appendicitis in the children of the poorer classes is often confused with digestive disturbances, so that as a rule these cases reach the clinic in an advanced stage of the disease. W. Neuberg (Deutsche Zeitschrift für Chirurgie, Bd. lxxxix, Hft. 4, 1907; Boston Medical and Surgical Journal, January 23, 1908).

ARTERIOSCLEROSIS, NERVOUS MANIFESTATIONS OF.

Various nervous symptoms are to be met with in this disease, some of which are consequences of the disease, while others are due to associated organic diseases. Those who suffer with arteriosclerosis are often affected at the same time with structural disease of the kidneys, heart, brain, or other organs, and it is always necessary to distinguish the symptoms caused by the associated conditions from those which are directly due to arteriosclerosis. The error must be avoided of attributing to arteriosclerosis the symptoms which result from purely accidental organic diseases when associated with it, but not essentially due to it. There is great danger of attributing all the obscure conditions of senility and even of the presenile period of arteriosclerosis. The aim of the author is to point out the certain results of vascular occlusion or disease, and also the symptoms associated with arteriosclerosis, which may be attributable to that condition on account of their analogy with the symptoms of that disease, and the exclusion of other probable causes. A. Stenzel (American Journal Medical Sciences, February, 1908).

BISMUTH TREATMENT OF SINUSES.

The writer describes the method of treating and diagnosing fistulous tracts, tuberculous sinuses, and abscess cavities by bismuth paste injections and radiography, which he has used since March, 1906. He gives the formulæ for the material used, as follows: Formula for diagnosis and early treatment—℞ Bismuth subnitrate, 30 grams; vaselin, 60 grams. Mix while boiling. Formula for late treatment—℞ Bismuth subnitrate, 30 grams; white wax and soft paraffin, of each, 5 grams; vaselin, 60 grams. Mix while boiling. The soft paraffin, unlike hard paraffin, is absorbed in the tissues, and the bismuth, being opaque to the x-ray, gives a shadow that shows the shape and ramifications of the cavities. In making the injections the writer first dries out the cavity, if possible, by packing with plain gauze, which is removed just before the injection. The emulsion is sterilized before using, and is injected hot and liquid from a sterilized syringe. The first case injected for diagnostic purposes suggested the value of the method for curative purposes also; after one injection of the bismuth paste the psoas abscess fistula, of nearly two years' standing, closed up entirely and remained closed. Subsequent experience confirmed its value. The author thinks it probable that the bismuth which becomes radioactive on exposure to the x-rays, promotes the formations of granulations where it comes in contact with the walls of the cavities, and to increase this effect, in some cases, he has added strontium salicylate.

Eleven cases are reported and the author's conclusions are summed up as

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follows: A successful surgical operation on fistulous tracts depends principally on the exact knowledge of the extent and direction of the sinuses before the operation is undertaken. Radiographs taken after the fistulas have been injected with bismuth paste, show the extent and direction of the fistulous tract. Skiagraphs of all fistulous tracts should be taken before an operation is decided on. Fistulous tracts, tuberculous sinuses or abscess cavities, including empyema, can be cured by injection of bismuth paste. Cavities or fistulæ should be as clean and as dry as possible before the injection of bismuth paste. The bismuth paste, when mixed with wax or soft paraffin, and injected in a liquid state, solidifies in the fistula and serves as a framework for new connective tissue. The paste is absorbed and the fistula obliterated. Bismuth paste injection will not heal out sinuses where sequestra are present; these must be removed before injection. The bismuth paste injections are painless and produce no unpleasant or dangerous symptoms. E. G. Beck (Journal of the American Medical Association, March 14, 1908).

CARDIAC COMPLICATIONS OF ACUTE RHEUMATISM.

It cannot be reiterated too often or emphasized too strongly that the cardiac affections of rheumatism occur in all their intensity without any ratio to the extent of the joint manifestations, and the intensity of the cardiac involvement in both children and adults is not necessarily in any ratio to the intensity of the other symptoms. Many of the symptoms which have heretofore been believed to be due to endocarditis, occur with the myocarditis and must be considered as equally due to this condition. After the acute joint symptoms have subsided, it is often noticeable that the patient's temperature does not come down to normal and remain there; there is a continued run of temperature from subnormal to subfebrile, from 97° or 98° to about 100°, and it may rise as high as 101°. This invariably means an actively continuing endocardial or myocardial inflammation. The pulse may range near normal or be slightly above. In the subacute forms, in which the degeneration of the muscle is more common than in the acute inflammatory condition, and in the chronic condition, the pulse-rate may be distinctly below normal. Heart disease, in the early half of life, is mainly of rheumatic origin, and it has been realized, in late years, that the treatment of heart disease has more and more become the treatment of the cardiac muscle. The position has now been reached where it must be realized that our knowledge of rheumatic endocarditis is still fragmentary and very incomplete. Heretofore our knowledge has been chiefly focused on the endocardial and pericardial involvement to the exclusion of the myocardial, but to-day it must be realized that the cardiac involvement of rheumatism includes endocarditis, pericarditis, and myocarditis, and the most serious is myocarditis. Alexander Lambert (Journal of the American Medical Association, March 7, 1908).

CHILBLAINS, TREATMENT OF.

No case need go beyond the erythematous stage, according to the writer. The two chief etiologic points are that the lesions occur at the extremities of the circulation, and that they are started by cold, and more especially by rapid transition from heat to cold. Mild cases of Raynaud's disease must be looked out for. Chills should be avoided; tepid water should be used to wash in; there

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should be no sitting over the fire, and particularly no going directly therefrom into a cold outside atmosphere. Foot and hand wear must be carefully chosen.

Massage is helpful, especially as a prophylactic. Calcium chloride, in 15-grain doses daily, or tincture of strophanthus with liquor trinitri, may be given internally. Locally two drugs stand out pre-eminent, ichthyol and formalin; the former, 19 to 20 per cent. in lanolin, the latter as an ointment, in 10 to 50 per cent. strength. There will be much smarting in the presence of abrasion. Simple lanolin or petrolatum should be substituted after a few days for a short time. Treatment may be started with ichthyol and finished with lanolin. Iodin, tincture or as 2 per cent. iodin in collodion, silver nitrate solution, or camphorated spirit, may be used. Galvanism, faradism, and x-rays have all been used with benefit, the last in ten-minute doses with a hard tube and 0.5 milliamperes in the secondary circuit; when continued thrice weekly, stopping short of reaction, it causes eventual disappearance. In the ulcerating stage the writer recommends: Ammoniated mercury, grains v (0.32); ichthyol, minims x (0.16); starch powder, powdered zinc oxid, of each 2 drachms (8.0); petrolatum, ℥ss (15.0). If all local means, coupled with general treatment, fail, lupus erythematosus should be suspected. F. Gardiner (Practitioner, February, 1908).

DIABETES MELLITUS, OATMEAL DIET IN THE TREATMENT OF.

While occasionally the stomach will rebel and refuse to tolerate this food for any great length of time; while the diet is not suited to all cases, being of least avail in the milder forms; while it fails even in some of the severer types, and while no claim for a cure of diabetes can be made, this diet still remains a most valued therapeutic agent for the warding off of impending coma in the severer types of diabetes and for assisting in the establishment of a tolerance for carbohydrates. In the milder types of diabetes the writer has so far seen no ill effects follow its use, but the benefits have been trifling. His experience in using it in the diabetes of moderate severity has in general been favorable, it being of especial help in establishing tolerance for carbohydrates. In the diabetes of children, if employed early, it seems to exert a usually favorable influence. J. B. Herrick (Journal of the American Medical Association, March 14, 1908).

EMBOLISM CONSEQUENT ON LESIONS OF THE LEFT HEART.

In discussing embolism consequent on lesions of the left heart, the author asks to what must be attributed the preponderating part played by mitral stenosis. The solid embolus is sometimes of endocarditic vegetation. This form is common to all forms of heart disease. The formation of clots is a complex phenomenon, however, and dependent on: 1, coagulability of blood; 2, changes in walls; 3, blood stasis. The first two conditions are not especially associated with any particular structural change, but blood stasis is hardly likely to be present save in mitral stenosis and is, therefore, the principal cause of the tendency to clot formation. Thus we get the relationship of cause and effect between mitral stenosis and embolism in the aortic domain.

The migration of the embolus and the results of its lodgment are next considered by the writer. The prognosis depends on its size, its seat, and its nature. The bearings of the first two

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are fairly obvious. With regard to the nature, not every arterial obstruction is to be permanent. Recent freshly formed clots may cause merely temporary blockage, then break up and disappear, and in recent cases this fact must be borne in mind in respect to both prognosis and treatment. In embolism of the viscera treatment can be only palliative. In recent embolism of a limb the possibility of absorption must be considered. The necessity of strict immobility in phlebitis may cause hesitation in moving or massaging a limb with a damaged artery, but it must be remembered that a venous clot dislodged passes into the right heart and thence into the lungs, whereas the loosening of an arterial clot in the extremities can have only good effects, since it will free the lumen of the large artery and the fragments of the clot can, after all, not go further than the capillary barrier. In recent embolism of the extremities, therefore, massage is strictly indicated and has been proved satisfactory, but it is useless in cases of old standing. P. Claisse (Medical Press and Circular, January 22, 1908).

EXOPHTHALMIC GOITER, TREATMENT OF.

The author lays the greatest stress on the regulation of the diet. Complete mental and physical rest, fresh air, rest cures, and artificially carbonated baths and electricity are all valuable adjuvants. He gives iron and arsenic in anæmia and emaciation, bromides in case of nervousness, valerian or, exceptionally, digitalis when the heart disturbances are distressing. In many cases of the so-called "goiter heart," which can scarcely be distinguished from the latent forms of exophthalmic goiter, he has found ergot useful. He has never witnessed any objective benefit from the serum of thyroidectomized sheep, but the patients are often subjectively benefited by it. He tells of several fatalities following operative treatment; in certain other cases no objective improvement can be detected. At the same time he knows of several cases with successful results of operative measures and he would certainly operate in severe cases after failure of all other measures. Eulenberg echoes Strumpell's remark that treatment can be only symptomatic, as no specific treatment is yet known. He has given the serum of thyroidectomized sheep in 17 cases, and never observed any ill effects nor any important and permanent benefit. Even at the best, the goiter was only slightly reduced in size, with transient improvement of the cardiovascular symptoms. He has noted considerable improvement in the general health after a course of treatment with nerve tonic. The resisting powers must be adequate and the local symptoms very serious, he asserts, to justify operative interference. Eichhorst regards physical and dietetic measures as the principal reliance in the treatment of exophthalmic goiter. Rest for mind and body is the main point. Remaining in bed may give good results without other measures. He orders a warm bath for fifteen minutes daily, and has obtained surprisingly excellent results from a change of air, especially a sojourn in the mountains. His experience with the serum of thyroidectomized sheep was entirely negative; it did neither harm nor good, and his experience with the Roentgen treatment was the same. If no benefit is apparent after three months of internal treatment, he proposes surgical intervention without making any promises on its behalf, although he knows of a number of patients who have been permanently cured by it.

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A. von Strumpell (Medizinische Klinik, January 12, 1908; Journal of the American Medical Association, February 29, 1908).

GONOCOCCUS IN DISEASE, ROLE OF THE.

In an exhaustive study of this disease, the author reaches the following conclusions: It attacks the human urethra and there gives rise to both catarrhal and hyperplastic inflammation from which may follow chronic urethritis and a tendency to stricture. By contiguity of tissue it invades the testes and their appendages, and thus threatens sterility in men. Limited in its effects, as a rule, to the subepithelial connective tissue layer, it in some cases, by further invasion, gains foothold in the venous and lymphatic radicles of the male and female genitalia and produces local and general disturbances. By this extension the whole organism may be more or less seriously attacked, and local disorder, much suffering, and disability may result. The gonococcus then becomes a true factor of septicæmia, and serious and even mortal illness is to be feared. Arthritis and rheumatism are the most constant concomitants of gonorrhœal invasion, and produce marked changes in the joints, the tendons, the bursæ, and the muscles. Generalized systemic infection is most commonly observed when by extension (usually from the joint) the heart, in part or in whole, is attacked; then severe and possibly mortal illness may be produced. In general, the reaction is in proportion to the extent of cardiac territory attacked, and such cases may assume a malignant form. Such is the antitoxic power inherent in the blood serum, that in very many cases, even when vital parts are attacked, the gonococcus is destroyed. By reason of its toxins, or perhaps of the microbe itself, more or less structural change is produced in the cerebrospinal system which may be local or more or less generalized. Gonococci invasion of the pleura is not uncommon, and various forms of phlebitis may result. While it has been shown that the spleen may be attacked, there has been no evidence of liver involvement described. A large range of cutaneous and mucous lesions have their origin in the gonococcus. These are ulcers, abscesses, and follicular lesions, erythematous and keratosic exanthems. Bone lesions of mild and severe forms are more or less remotely dependent on the virulent potentialities of the gonococcus. The whole genito-urinary tract in the male may be involved by the gonococcus; the prostate, seminal vesicles, bladder, and ureters may be attacked. Certain extra genital parts, such as the mouth, rectum, nares, umbilicus, and eyes are frequently the seat of gonococci inflammation. Infection of the female genito-urinary tract is very common. When the lower pudendal portions are involved there is less danger, but extension of the process to the uterus and parts above constitute menaces to health and life. The question as to whether an inhibitory serum may be produced to kill or jugulate the virulent microbe is as yet unsettled. In the vast majority of cases of gonorrhœa the gonococcus is at first the absolute causal agent. The few cases in which a condition resembling gonococci urethritis is produced by other microbes constitute but a drop in the bucket. While the gonococcus may become latent and may hibernate in tissues, crypts, and follicles, it may at any time become potential. It may also lead to mixed infection and prepare the soil for other microbes which may run a severe course. The gonococcus thus shows itself ca-

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pable of producing the most far-reaching infections to which the human race is liable. Robert W. Taylor (American Journal of Obstetrics, January, 1908).

HAND AS A THERAPEUTIC AGENT.

The hand is a most intelligent instrument for the physician, albeit a most neglected one. Manual operations have been left altogether too much first to quacks, and later to more or less unqualified persons—unqualified, that is, in all respects beyond the mere technic of their application. So important are intelligent, judiciously applied massage, passive movements, stretching, torsions, etc., that the laity recognizes their utility more clearly than members of the medical profession. The author refers to the powerful effects capable of being wrought on the vasomotor and visceromotor mechanisms of the centers of the cord, the subsidiary centers, the exposed points in nerve and ganglia, when intelligently operated on by an experienced physician. Here a knowledge of the governing mechanisms is required, along with familiarity with the natural history and phenomena of disease, such as is assumed to be in the possession of the expert clinician. Even when the physician prescribes their use by others he should know how to prescribe them in detail according to the actual requirements of the individual case, just as he does not leave the quantities of the drugs and the directions for their use to the pharmacist, but details them in the prescription.

The writer discusses manual operations as aids to diagnosis and treatment, and also massage and passive movements. The points which should be borne in mind in regard to massage are: 1. The rate of movements. 2. Depth and gradation of pressure. 3. Quality of skin touch. 4. The length of time consumed. 5. The kind and degree of exposure of the parts. 6. General massage is exhausting to invalids, especially to convalescents. J. M. Taylor (New York Medical Journal, February 8, 1908).

IMMUNITY AND X-RAY THERAPEUTICS.

All x-ray treatments, to be effectual, may require a degree of intensity sufficient to set free in the tissues what is equivalent to an autogenous vaccination. The duration of the exposure and the extent of the diseased tissue exposed should be so regulated as to induce either a small negative phase or none at all.

The repetition of exposures, as far as possible, should be governed by the duration of the negative and positive phases; and in diseases of which the disease-producing agent is as yet undetermined, one should be governed by analogy with those cases in which opsonic estimations can be made.

It follows as a corollary that it is not necessary to expose the whole area in order to bring about complete recovery, and that exposure should not, as a rule, be repeated oftener than twice a week, and probably usually at less frequent intervals, to get the maximum results and to avoid prolonged or incurable negative phases. It is also increasingly necessary to measure x-ray dosage. In this respect x-ray therapeutics is lacking in precision. No method has yet been made practicable by which the quality and quantity of the x-ray dose may be exactly specified.

The advantage of x-ray treatments over opsonic therapeutics is believed by the writer to be considerable. The immunizing substance set free under the influence of the x-rays is of necessity

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autogenous; that is, it is formed from the actual microbic strain which is producing the disease. Many of the difficulties and mistakes incident to a bacteriological diagnosis are eliminated. In cases in which the bacteriological cause is as yet undetermined, or in which the disease-producing agents are not bacteria, the x-rays are nevertheless applicable. A. W. Crane (American Journal of the Medical Sciences, March, 1908).

INDICATIONS FOR WATER IN CHILDHOOD.

The writer gives a summary of the influence of water on the various bodily functions and makes a plea for its greater internal use in children. The healthy infant of several months should take a full glass in the course of the twenty-four hours, the amount being varied according to the weather. The amount should be increased in all conditions accompanied by elevations of temperature. It will restore the loss sustained through the fever, enhance the glandular activities, and by the dilution of the food will enable the gastro-enteric tract to absorb more readily the nutriment and so will maintain vitality. Its use in local gastro-intestinal diseases is too well known to call for more than mention. In bladder instability due to concentrated and acid urine, water will prove of unquestioned benefit. In laryngitis and bronchitis, its ingestion will moisten the bronchial mucous membranes, liquefy the viscid expectoration, and act as a mild expectorant.

There are, however, certain conditions where the restricted use of water is clearly advisable. Such cases as œdema or pleuritic effusion, where the extravasation of fluid into the tissues is great, water is certainly contraindicated. In cases where there is a high arterial tension, with congestion or inflammation in certain organs, such as the brain in meningitis, or the lungs in acute lobar pneumonia, an increased ingestion of water will aggravate the condition by additionally distending the blood-vessels, and the withdrawal of water is unquestionably the proper treatment. In fact, in any condition where there is congestion in important organs as a result of acute inflammatory processes, the use of large quantities of water is contrary to good judgment. M. Barbour (New York Medical Journal, February 8, 1908).

IRITIS, RATIONAL TREATMENT OF.

The initial clearing out of the gastro-enteric canal is advised by the author. Emetics should be avoided. The eye should be placed at rest by atropine, or, if it produces poisonous effects, sulphate of duboisine or hydrobromide of scopolamine may be used; if it is necessary to reduce tension, sulphate of eserine. For pain the hot, moist compress gives the greatest relief. Poultices are to be avoided. If morphine is required, it may be combined in the rheumatic cases with the salicylates. Adrenalin is useless and may be harmful. Dionin may be used in combination with cocaine and atropine, and while dionin itself (ethyl morphine hydrochloride) does not relieve the pain, it is a useful agent in promoting the absorption of the inflammatory product. Hypopion complicating iritis rarely requires special treatment. Rest, hot compresses, dionin locally, and a cathartic will usually cause the exudate to be absorbed. In rare cases surgical intervention (paracentesis) may be necessary.

As to a posterior synechia, the ideal treatment is, of course, prevention. A few small adhesions do no. or very little,

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harm, and they are, perhaps, better let alone. An effort may be made to break the adhesions by means of a strong mydriatic. Occasionally it is well to contract the pupil first with eserine, followed by a counteraction with a strong solution of atropine. If no success follows this process it is best to discontinue the drugs. It must be remembered that the prolonged administration of atropine may give rise to a secondary glaucoma. Large posterior synechiæ, and especially the annular synechiæ, are dangerous to the eyes, not because they are responsible for the recurrences, but because they eventually destroy the usefulness of the eye by causing a secondary glaucoma. It is advisable to do an iridectomy, although even the surgical procedure is not always crowned with good results.

In syphilitic cases the system must, of course, be brought as speedily as possible under the influence of mercury. When the inflammatory symptoms are subsiding the iodide is of great value in promoting the absorption of the inflammatory product. Small doses of mercury should be given even after the eye shows no more signs of inflammation. It is the only safeguard against recurrence. Fresh air, good food, quinine for malarial complications are essential in building up the general state. A. Brav (New York Medical Journal, January 22, 1908).

LACERATION OF THE CERVIX AS A CAUSE OF POST-PARTUM HÆMORRHAGE.

Lacerations of the cervix may properly be considered as of two types: (1) Those of the infra-vaginal portion which do not give rise to serious bleeding and are best left to nature, or, if oozing is free, treated with the gauze tampon; (2) tears which have their origin at, or extend into, the retraction ring, involving the uterine or circular artery and causing hæmorrhage of a most persistent nature. Cases of this latter class seldom, if ever, occur where expulsion can be left to nature, but, on the other hand, are probably frequent in certain artificial deliveries. Packing, alone, is inadequate to control the hæmorrhage, and immediate suturing is demanded. Prompt and accurate diagnosis of the source of the flow should be made in all cases of undue post-partum bleeding. Wm. Wertenbaker (American Medicine, February, 1908).

LIVER ABSCESS, TROPICAL.

The most noticeable feature of tropical abscess, as distinguished from other forms of suppuration in the liver, are that it is most often a single abscess, that it generally attains a large size and so gives indications of its presence, that it is not as a rule associated with general pyæmia, and is not dependent upon any antecedent coarse disease of the liver. This type of abscess is rarely found except in persons who have lived in tropical or subtropical countries, and it affects Europeans more often than natives. The exact causes which determine its formation are not exactly understood. Habitual overfeeding and indulgence in alcohol are credited with a share in its production, but the cause which overshadows all others by its frequency is the occurrence of dysentery. Whether bacillary dysentery in tropical regions can give rise to abscess, or whether the amœbic variety alone can do so, is still *sub judice*. While the contents of a large number of liver abscesses are sterile as regards bacilli, the majority of abscesses associated with amœbic dysentery do actually contain

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amœbæ. The successful treatment of tropical abscess by surgery depends on its being single, or at most double. The symptoms are often indefinite, comprising chiefly weakness and lassitude, loss of flesh, a sallow, muddy complexion, and sensations of chilliness or actual rigors. Pain in the right shoulder is a time-honored symptom of abscess in the upper part of the right lobe of the liver, and is explained by radiation along a small branch of the subphrenic nerve, which communicates with the nerve to the subclavius muscle. Enlargement of the liver in an upward direction is almost pathognomonic of liver abscess, but it is not easy to recognize. The chief difficulty in diagnosis in abscess of the liver arises from its simulating disease of the right lung or pleura, or from its being complicated with actual effusion into the pleura. Bradshaw (Lancet, January 18, 1908).

LUDWIG'S ANGINA.

This is a rapidly spreading cellulitis beginning in the region of the submaxillary gland and extending to the floor of the mouth and pharynx. It may originate from a carious tooth, a tonsillitis, or an ulcer in the mouth. The infecting organism is the streptococcus, either alone or combined with staphylococcus, pneumococcus, or bacillus of malignant œdema. Death usually results from invasion of the larynx, the lungs being frequently involved also. The path of invasion is the opening in the muscular bucco-pharyngeal wall through which the submaxillary gland projects into the floor of the mouth. If the phlegmonous process begins in the pharynx or larynx, the danger is very great, as the tissues cannot be properly inspected, disinfected, and incised. Modern surgical treatment has somewhat reduced the extreme virulence of the septic phenomena. The most favorable incision is over the submaxillary triangle and parallel with the lower border of the jaw. If this does not reveal the abscess, the mylohyoid muscles must be divided and the sublingual tissues exposed. Local anæsthesia is preferable when performing the operation. T. T. Thomas (Annals of Surgery, March, 1908).

MALIGNANT TUMORS, TRYPSIN IN.

In every one of the writer's six cases there was gradual inevitable progress of the disease; four patients are dead and two, though still living, will undoubtedly die very shortly. On the other hand, a few injections of trypsin into one of the circumscribed nodules that occur in recurrent breast cancer will cause the nodule either to disappear, or to shrink greatly, and that particular nodule will not grow again. A section of such a shrunken nodule after several treatments shows under the microscope the remains of destroyed cancer cells, while the somatic cells of the connective tissue remain intact and healthy.

It cannot be claimed that any great advance has been made in the actual cure of cancer by trypsin, but the scientifically established fact, that trypsin has a specific destructive action on the cancer cell and on the deadly ferment that it secretes, gives at least a gleam of hope that an effective method of applying the remedy may yet be discovered. The last word concerning the trypsin treatment and the germ cell theory of cancer has not yet been said, and the writer believes that embryologic and cytologic inquiry points the road for future investigations. W. P. Graves

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(Boston Medical and Surgical Journal, January 23, 1908).

MEMBRANOUS CROUP, NON-DIPHTHERIC.

The author reviews the literature on membranous croup independent of the diphtheria bacillus, and states that only six authentic cases are on record, to his knowledge. He then announces that last winter he encountered nine cases in the diphtheria wards in the course of two or three months. The clinical picture was that of membranous croup, while from three to seven bacteriologic examinations of the false membrane failed to disclose the diphtheria bacillus in a single instance. There were only five immediate deaths in the group of fifteen cases, but two of the patients succumbed later to complications and another required intubation permanently. Those patients who recovered were sick only a few days. None of the patients had any symptoms of coryza, but the temperature was much higher than in diphtheria croup, and the glands in the neck were not swollen or tender. The infection seems to affect the entire respiratory tract from the start, so that the symptoms on the part of bronchi and lungs were prominent from the first. The entire larynx and lungs were involved in the five cases in which autopsy was possible. The false membranes extended to the bifurcation and even into the large bronchi, while the lungs were congested, with foci of bronchi-pneumonia. Wherever the tube had rubbed there was ulceration. Unless there is marked relief from the expulsion of the false membranes early, the patient does not seem to be relieved by intubation and injection of anti-diphtheria antitoxin; the temperature remains high and the pulmonary symptoms predominate. M. Jacod (Semaine médicale, October 23, 1907; Journal of the American Medical Association, November 23, 1907).

MENINGITIS, DIFFERENTIATION OF.

The various affections liable to induce symptoms on the part of the meninges are reviewed by the writer, and the differentiating points enumerated. Examination of the blood, cerebro-spinal fluid or of a scrap of muscle, will differentiate malaria, anthrax, trichinosis, or other infections; the main point is to think of the possibility when confronted with a syndrome suggesting meningitis. Early paralysis will sometimes differentiate acute encephalitis. Thrombosis of the transverse sinus may be differentiated by the œdema over the mastoid process, the only partial filling of the external jugular vein on the affected side, the twisting of the head toward that side, and the tenderness to pressure of the inner margin of the sternocleidomastoid muscle. This tenderness is due to descending phlebitis of the internal jugular vein, and is thus a companion to the external jugular vein sign. Sarcomatosis, carcinosis, and cerebral echinococcus cysts may induce meningeal symptoms, but the absence of fever and the findings in the spinal fluid readily differentiate them. In one case, a hard drinker with a subfebrile tuberculous process in one lung and cirrhosis of the liver with enlargement of the spleen suddenly presented symptoms of supposed incipient tuberculous meningitis with increasing delirium. On suspicion of possible delirium tremens large doses of chloral were given, soon followed by subsidence of all the meningitic symptoms. In another case the cerebro-spinal fluid was clear, but the other symptoms indicated meningitis, possibly of typhoid origin, as the abdomen was soft and

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there was some meteorism, with diarrhœic stools. As the agglutination test gave constantly negative results and the respiration and pulse became rapid with increasing cyanosis, the diagnosis was corrected to miliary tuberculosis with tuberculous meningitis, but autopsy confirmed the first assumption of typhoid meningitis. The writer has encountered but one instance of diarrhœic stools with tuberculous meningitis. Meningeal symptoms from lead poisoning are readily differentiated, as a rule. N. Ortner (Medizinische Klinik, January 12; Journal of the American Medical Association, February 29, 1908).

MIDDLE-EAR SUPPURATION: INDICATIONS FOR MAJOR OPERATIVE TREATMENT.

The two most prominent indications for operative interference on the mastoid in acute middle-ear suppuration are the presence of local tenderness over the mastoid, and the sinking of the upper and posterior wall of the external auditory meatus, close to the drum membrane. It has been the experience of the author that in almost every case of acute otitis media, tip tenderness may be elicited within the first twenty-four hours of the attack, even though free incision of the drum membrane is performed early.

The importance of local tenderness as an indication for operation depends on the period in which it appears. The tenderness, although very pronounced, coming on at the time of the middle-ear inflammation and persisting in spite of free drainage for forty-eight hours or more, is not necessarily an indication for immediate operation, provided the drainage from the middle-ear has been fully established by means of free incision of the membrani tympani. The same amount of tenderness occurring on the fifth or sixth day of an acute middle-ear inflammation, would render immediate operation imperative. The sinking of the upper and posterior walls of the external auditory meatus close to the drum membrane, or an actual shortening of the meatus, is indicative of distention within the tympanic cavity as the result of inflammatory products within the mastoid which require evacuation by operative interference. The technic of operative measures is discussed. Edward B. Dench (Journal of the American Medical Association, February 8, 1908).

MIDDLE-EAR SUPPURATION, CHRONIC, TREATMENT OF.

The establishment and maintenance of free drainage is the first essential to successful treatment. The free exit of the discharge should be encouraged by the enlargement of small perforations in the tympanic membrane. Not only should the nose and throat be treated to prevent further infection through the Eustachian tube, but any pathological condition interfering with the physiological functions of the tubes should receive careful attention. Wm. Milligan (Journal of Laryngology, Rhinology and Otology, October, 1907).

NEURITES IN THE COURSE OF CIRRHOSIS OF THE LIVER.

Peripheral neurites may appear at very diverse periods in the evolution of an alcoholic cirrhosis of the liver. In some cases they seem to mark the commencement of the cirrhosis, in others they become manifest in the latter stages of the disease. The two types, very different in their clinical aspect and in their lesions, are not of equal interest. In the one case the neurites are masked as it were by the multiplicity of

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the cachectic symptoms, while in the other they are from the first rendered prominent and striking by their intensity. The neurites which appear in the final stage of cirrhosis are not very frequent and are due to degenerative lesions, the character of which is striking as compared with the inflammatory character of ethylic polyneuritis. In all other forms of neuritis which are manifested during the course of cirrhosis, the symptoms are extremely severe and the lesions on which they depend very pronounced. In other words, in most cases of polyneuritis associated with alcoholic cirrhosis of the liver, the neuritis is a classical alcoholic polyneuritis. M. Klippel and J. Lhermitte (Semaine médicale, January 8, 1908; New York Medical Journal, February 8, 1908).

NIHILISM AND DRUGS.

The author believes that a physician should be judged by his knowledge and not by his cures, and so bring medicine to the dignity of a science and not an art. He refers to the attitude of Oliver Wendell Holmes, who said: "It is not of the slightest interest to the patient to know if two or three cubic inches of his lung are hepatized," etc., and to the more modern William Osler, who advised students and physicians to be skeptical of the Pharmacopœia and counselled them to study people and learn to manage them, and said that it was the best doctor who knew the worthlessness of medicines. The writer expresses the belief that we owe much to the writings of Dr. Osler, but that we should be wary of all his sayings because of their widespread influence. He wished that Dr. Osler had said: 1. Be critical of the Pharmacopœia. 2. He is the best doctor who knows the worth of medicines. 3. Study your fellow men and learn to serve them.

The writer shows the impractibility of the one drug rule. He cites the "mixed treatment" of syphilis as a striking example of many drug methods. The cachexia should not be treated by any one drug, but by a union or combination of many, such as quinine, ergot, iron, etc. He urges practitioners not to treat the disease, but the man or woman. He refers to the expectant treatment as practised by many, and cites a case of spastic encephalitis in which a specialist was called in and said: "Let me see her in six months." He being called in subsequently, advised potassium iodide, massage, hydrotherapy, etc., and the child was greatly improved in six weeks. Thus the actual treatment of a month with drugs had proved superior to the expectant treatment of six months. The writer regards the expectant treatment as a sin of omission which frequently arises to the dignity of a crime. It is apt to render men callous. The expectant treatment of diphtheria is cited as being especially bad, and drugs, vigorous stimulation with alcohol and local antisepsis are strongly advised.

As to drugs, the author believes cardiac stimulation by means of digitalis, strophanthus, sparteine, strychnine, ammonia and musk indispensable in the heart failure of pneumonia, and they often are really life-saving. He urges large doses when required. As to the dose for any particular age, giving as much of a remedy as the case demands is recommended. He considers the injection of morphine over the seat of pain better than into the arm, but also deems it far better in the arm than in the stomach. Contrary to the general opinion, the writer believes opium to

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be well borne by children, because of their indolent nervous systems due to lack of higher development. Belladonna, too, must be given in full-sized doses to obtain the best results.

The author believes no case of chronic tuberculosis properly treated unless guaiacol is used. Whether it acts upon the stomach, improving and stimulating it, or antagonizes the toxine is as yet unknown, but it does give good results. A. Jacobi (New York Medical Journal, February 8, 1908).

NORMAL SERUM, THERAPEUTIC USES OF.

The use of normal serum is commended by the author, who has successfully used it in a case of anæmia, a second, of tuberculous hæmoptysis, a third, of probable gastric ulcer without hæmorrhage in a chlorotic young woman, and a fourth of duodenal ulcer with hæmorrhage. He believes that oral administration fulfills all indication, and that subcutaneous or intravenous injections are unnecessary. In the above various conditions it is not impossible that there is a common basis of autocytolysis, characterized by destruction of epithelial, endothelial, hæmic, or other cells, and that such autolysis can be inhibited by normal serum. Many interesting questions arise in connection with normal serum therapy. For instance, what share have the normal constituents of serum in the results obtained by the use of serums such as the anti-diphtheritic and the polyvalents which are now attributed entirely to the action of abnormally produced bodies? Although the author is optimistic as to the effects of normal serum therapy in various conditions, he says our knowledge of its action is so slight that caution must be exercised in its use, and it is desirable that methods of testing and standardizing the serum with regard to its anti-autolytic, anti-hæmorrhagic, and other properties should be employed in the future. It is also important that serum should be used from a horse that has been repeatedly bled, as its activity seems to be thereby enhanced. E. C. Hart (Lancet, February 15, 1908).

OCULAR SYMPTOMS OF NASAL ORIGIN.

Owing to the intimate relationship of the ocular structures with the numerous connecting cavities of the nose, it is not in the least surprising that active inflammatory conditions of the latter may produce disturbances of the visual apparatus, even to destructive lesions, such as neuritis, retinitis, choroiditis, iritis and keratitis. O. A. Griffin (Journal of the American Medical Association, November 9, 1907).

OTHEMATOMA, THE OPERATIVE TREATMENT OF.

The operative treatment of the author differs from the ordinary treatment by means of a simple incision and pressure dressing, in that it aims at a radical procedure in excision of the diseased cartilage, with retention of the protective healthy skin. The auricle having been made surgically clean, and anæsthetized by a subcutaneous injection of a solution of cocaine and suprarenine, an incision is made throughout the length of the swelling on the anterior surface of the auricle, in its long axis, but through the skin only. There is usually but little hemorrhage, and the two skin flaps thus formed are successfully seized by the forceps, dissected up from the underlying swelling, and retracted until the contour of the swelling is completely exposed; a small short-bladed scalpel is the best instrument for this dissection, and extreme

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care should be taken to avoid puncturing the underlying sac, as the lack of the smooth resisting surface which it presents, when intact, considerably increases the difficulty of preparing a perfect skin flap. With the skin flaps completely retracted, and held in position by means of blunt hooks, a circular incision is made about the base of the swelling, and the tissues covering the fluid contents of the sack completely excised. With the evacuation of the fluid there then remains only a concavity upon the surface of which the skin flaps may be adjusted and kept in place by the pressure of gauze pads, until healing has ensued, the ultimate result being a smooth skin surface, with a slight linear scar on the anterior face of the auricle, and a preservation of the natural contour.

This method of operation is equally applicable in the perichondritis of the auricle which sometimes occurs as the consequence of the tympano-mastoid exenteration. It is important, however, to distinguish between the serous and the suppurative form of this affection: in the latter the flap operation is sometimes ineffective, in the former it is always applicable; the incision through the skin here also should be made over the greatest convexity of the swelling, in a line with its long axis. Of the 11 cases upon which the author has operated by this method, all have been done upon the anterior face of the auricle.

Microscopic examination of the excised outer covering of the othematoma justifies its radical removal and explains the deformity which usually results in unoperated cases; this outer covering is mainly cartilage, isolated from the main body of the cartilaginous plate of the auricle by means of cicatricial tissue, broken up into individual portions, inelastic, disorganizing and functionally ineffective for the preservation of the contour of the auricle. In cases of spontaneous healing the cicatricial retraction of the connective tissue fibres, evident in the covering of the othematoma, by exertion of varying stress in different directions, under shrinking of the connective tissue coincident with resorption of the fluid contents of the swelling, contribute to the irregularities, of surface pertaining in a deformity of the auricle which the method of operation above described is calculated to avoid. H. Seligman (Archiv für Ohrenheilkunde, Vol. LXIX, 1907; Journal of the American Medical Society, October, 1907).

PAIN AND BLOOD-PRESSURE.

The influence of pain on the blood-pressure has been observed by the author, and he found that in most cases pain caused an increase in blood-pressure; in analgesia of the skin, whether owing to organic lesion or to hysteria, no rise in blood-pressure followed the application of the electrode. In tabes and lead poisoning, during the attacks of abdominal pain the increase in blood-pressure was very great (up to 210 millimeters), falling at once after the attack was over. In the pain associated with cancer and ulcer of the stomach, gall-stones, appendicitis, and hydrops of the gall bladder, there was practically no rise in blood-pressure. This may be, in certain cases, an important point in differential diagnosis. H. Curschmann (Münchener medizinische Wochenschrift, October 15, 1907; Boston Medical and Surgical Journal, January 9, 1908).

PANCREATIC CATARRH.

While many of the ordinary cases of acute catarrhal jaundice are pancreatic

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in origin, nearly all, or possibly all, cases of so-called catarrhal chronic jaundice are due to catarrh of the pancreas or to interstitial pancreatitis. As regards the relation of interstitial pancreatitis to glycosuria, the writer considers the latter not a common symptom of pancreatic disease and not one that can be relied on as a diagnostic symptom. When present it indicates a serious though not necessarily hopeless condition. Such pancreatic glycosuria occurs only when the greater part of the pancreas has been removed or destroyed, which is particularly the case in chronic interstitial pancreatitis of the interlobular type, following obstruction of the ducts by calculi and produced by ascending catarrhal inflammations from the duodenum. Interacinar pancreatitis involving the islands of Langerhans, gives rise to glycosuria at an earlier stage. The delay in operation or lack of drainage of bile ducts may cause an original interstitial pancreatitis to pass on into the interacinar variety. He, therefore, considers it unwise not to drain the bile duct thoroughly, the drainage continuing until the bile becomes free from organisms and its normal route is free from obstruction. In a very large percentage of the cases the removal of the cause, together with drainage of the bile ducts, or in the absence of a removal cause simple drainage of the bile duct alone, is an operation that may be safely recommended in suitable cases that have failed to yield to general treatment. A. W. M. Robson (Surgery, Gynecology, and Obstetrics, January, 1908).

PASSIVE HYPERÆMIA.

The Bier method of using hyperæmia by cupping for therapeutic purposes, is described by the writer. Cups of all sizes to fit every part where the method may be desired to be applied have been devised, and the suction is produced by means of a rubber bulb. The applications, for example, in a case of carbuncle, previously opened, last five minutes, the pressure being carefully regulated; then the cup is removed and the exudate gently sponged away with a piece of gauze, after which the process is repeated after two minutes' rest, and this alternate cupping and resting is kept up for thirty to sixty minutes, when the part is cleansed and a simple wet dressing applied. The patient is again treated the following day; if a crust has formed, as over a sinus, it is carefully removed with a blunt instrument and the cupping repeated as before. The pus will usually be found to decrease each day and the granulations to become healthier, firmer, and less likely to bleed. The improvement continues each day, the exudate decreases and the case progresses toward recovery. In regulating the pressure, a bluish-red tint should always signify the limit; too much pressure, even though exerted without pain, may induce hyperæmia amounting to stagnation, obviously not the end desired.

Experience shows that the first few days of the treatment are most important; therefore, during that time the cupping should be done as above directed; later, as the condition improves, the length and frequency of the treatments may be reduced. Squeezing and massaging of the parts to get out the remaining pus is not allowable, neither is curetting. It is best also to avoid the use of the probe or of splints, and the patient should be advised to use the affected member. Frequently patients present themselves early in the infection (as in beginning carbuncle, ischiorectal abscess, and bubo) before suppuration

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has appeared, only the usual redness, swelling, tenderness, and infiltration being present. Such cases should be treated as described, but without incision, as resolution sometimes occurs without the use of the knife. When, however, incision is demanded, a cut from 1 to 1.5 centimeters long should be made and the cup applied at once.

In cases of bone tuberculosis, sequestra are sometimes drawn out; at other times they do not come away and are best left undisturbed, as Bier has observed that they sometimes unite with the healthy bone. The formation of cold abscesses is not to be dreaded, but looked on as a normal process in the course of the disease. They should be promptly recognized and followed by the incision and cupping.

Curetting, probing, or iodoform injections increase the chances of infection, and immobilization is not advised. In acute mastitis, to avoid pain, the diameter of the cup shouuld be at least 1 centimeter greater than that of the breast, and when the breast is engorged with milk and much pus is also present, and very little comes away, a small cup should be applied over the nipple, and incision made after the treatment, simply to draw off the pus and milk. This is only necessary in the presence of pus and will hardly be needed more than two or three times.

While recognizing that there are cases unsuited to this treatment, the writer claims for it certain advantages, viz.: Relief of pain, which is one of its most striking features. Rapidity of cure, the disease being materially shortened. Preservation of function. The tuberculous joints are not immobilized, healing taking place with motion very frequently. The wide radial incisions are avoided in mastitis, hence a minimum of the scar tissue that often interferes with the function of the gland. Discarding of the drain, itself a distinct advance. Simplicity. The physician, as well as the surgeon, can use the method successfully. B. M. Bernheim (Journal of the American Medical Association, March 14, 1908).

PHOSPHATURIA AND THE TREATMENT OF DISEASE BY CONVERSION.

It has not infrequently been observed that in chronic urethritis, the urine has become altered in character and assimilated with that known as phosphaturia, the change occurring irrespective of any internal medication, and further, that when this change was observed the cessation of the discharge or gleet, as it is commonly called, for which the patient had originally come under treatment, usually soon followed, either spontaneously or by treatment appropriate to the phosphaturic state without apparent reference to the cause which preceded it. This casual observation raised the question whether it was possible that there was any relationship between this incident and what followed; whether, in fact, the phosphaturic state of the excretion was inimical to the existence of the infecting bacillus. The observation was made so frequently as to suggest this, and led to the systematic examination of the urine and other discharges for gonococci in all persons coming under treatment for gleet more carefully and frequently than previously. From them the following conclusions appear to be grounded: 1. That in a considerable number of instances thus designated and undoubted specific origin, there was no evidence at the time of examination that there was anything wrong with the urine or with any urethral discharge complained of inconsistent with the phospha-

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turic state alone. This condition was either apparent to the eye on allowing the urine to stand for a short time in a glass vessel or was evidenced by boiling the excretion when any cloudiness which followed was immediately removed by the addition of nitric acid. Here any pus corpuscles which the microscope detected were physically explainable by the crystalline precipitates the urine contained and which were often present in sufficient quantities to give this excretion a semi-purulent or opaque appearance. How or when this phosphaturic transformation took place in the history of an ordinary case of chronic infecting urethritis was not always easy to determine. In many instances which were carefully tested and microscopically examined this change appeared to mark the concluding stage of gonococcal life, and was also often coincident, or nearly so, with the adoption of such treatment as the phosphaturic state usually requires. Further, these examinations showed how easily and frequently phosphaturia may counterfeit and be treated for a specific urethritis, and even be intensified by the remedies commonly used for the latter.

2. The second inference was that the artificial production and temporary continuance of a state of phosphaturia might be utilized in the treatment of specific gleety affections following upon gonococcal infections. To produce a urine having the prominent features of phosphaturia by the administration of alkalies—bicarbonate of potassium was generally selected for this purpose—is not a matter of much difficulty or of any detriment to the patient. The effect on the urine should be sufficient to render it responsive to the usual tests, microscopical and otherwise, by which phosphaturia is recognized, and not merely to produce an alkaline reaction to test paper. Further, it is necessary to maintain this condition for some little time, during which period all local applications should be suspended. It will usually be found after a period of ten days or so, and as the phosphaturic condition gradually passes off under the influence of altered treatment and diet appropriate to this state, that no signs will be found such as were previously complained of. R. Harrison (Lancet, February), 1908).

PLEURISY WITH EFFUSION, SUDDEN DEATH IN, DUE TO CHANGE OF POSITION.

Sudden death in some cases of pleurisy with effusion, on changing position, is preceded by dyspnœa, irregular pulse, and general anæmia caused by collapse of the venæ cavæ and heart; and is due to failure of the venous congestion to compensate the constant variable hydrostatic pressure.

Dependent as it is on one physical factor (pleural pressure) the venous pressure affords a reliable sign of the intrapleural pressure. Changes in the degree of venous pressure show the activity of the lesion producing the effusion, either increasing or decreasing, especially after the walls of the cavity are stretched. Maximum venous pressure heralds the approach of a period of unstable venous compensation, or the beginning of a failure of the veins to compensate. During this period the patient is exposed to attacks of syncope, sudden death on changing position, or to sudden death from a rapid rise of factor (A) of the pleural pressure. During this period the necessary precautions should be taken to prevent unnecessary change in the position of the patient—a horizontal position should be maintained. Maximum venous pressure is a signal for immediate interference, tapping.

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The importance of the venous pressure suggests a general application, by clinicians, of the present methods for measuring venous pressure, to all cases in which venous congestion is present, for the purpose of determining the range of pressure in each pathological condition.

In cases of sudden death, the clinician should remember the success following continued stimulation of the heart in experiments in physiological laboratories, when the heart has failed; and should apply, over a number of hours, and so far as possible, the same measures to the human heart. By so doing, a portion, at least, of these cases might be saved. The first step is to reduce the pleural pressure and increase the venous. Turning the patient on the affected side and nearly in a perpendicular position, would serve to transfer the variable from the cava to the outside wall of the pleural cavity and add to the venous pressure the column of blood in the large veins. This change in pressure would add much to the effective force of the venous pressure, and might, with the aid of the stronger heart stimulants, revive the heart. Artificial respiration would, at least, slightly change the small amount of blood which might be forced through the lungs to the left heart. At this stage arterial blood would materially aid in further reviving the heart. If by these means the heart begins to act feebly, the next step is to remove a little fluid from the pleural cavity, a few cubic centimeters. If too much fluid is removed the heart will not be able to do the increased work. As the heart is better supplied with blood and increases in strength, more fluid can be withdrawn. Repeated withdrawal of small amounts of fluid, until the venous pressure falls below the maximum pressure, is indicated; after this the heart is better supplied with blood and more capable of performing its increased work. Later the fluid may be withdrawn in larger amounts. W. J. Calvert (Bulletin of the Johns Hopkins Hospital, February, 1908).

POSTPARTUM HÆMORRHAGE.

The treatment of postpartum hæmorrhage is dependent on the question whether after separation of the placenta, it is arterial or venous blood that is lost during a flooding. The writer goes into detail in regard to this subject and expresses his opinion, contrary to the prevailing one, that the bulk of the blood lost in postpartum hæmorrhage flows from the maternal sinuses, through the uterine veins by a backwash from the inferior vena cava; consequently, the treatment of serious postpartum hæmorrhage resolves itself into that of regurgitant venous hæmorrhage, and must be carried out by one of two methods: (1) The application of direct pressure to the bleeding sinuses, after the method advocated by Dr. Herman, of introducing one hand closed into the vagina, while, with the other, the fundus of the uterus is pressed down on to it through the abdominal wall; or, (2) elevation of the pelvis and compression, not of the aorta, but of the inferior vena cava, by precisely the same maneuver. He is of the opinion that the method of arresting postpartum hæmorrhage by compression of the aorta depends for its success on the compression, not of the aorta, but of the inferior vena cava, thus stopping the backwash of blood from the latter vessel. J. H. E. Brock (Practitioner, January, 1908).

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PULMONARY TUBERCULOSIS AND ATHEROMA OF THE AORTA.

Atheroma in the aorta and other large arteries have been found by the author in 125 out of 385 tuberculous cadavers. The comparative frequency of the combination of atheroma and tuberculosis and the dangers of the frequently ignored tuberculosis in these conditions render the subject one of vital interest. Pulmonary tuberculosis accompanying atheroma is generally a torpid, latent process, easily overlooked unless systematically sought for. Many elderly persons with atheroma, who are supposed to have merely an ordinary catarrhal affection of the air passages, are in reality tuberculous and their sputum is liable to spread infection. The fibrous form of tuberculosis is most frequent in the atheromatous. It is characterized by sclerosis, emphysema of the lungs and dilatation of the right heart. The suprarenal capsules were the seat of tuberculous lesions in 65 out of the total 125 cases. The complete suprarenal syndrome with Addisonian pigmentation and asthenia was observed in 20 cases; it coexisted with sclerous or tuberculous lesions of the suprarenal capsules. E. Boinet (Bulletin de l'Académie de Médecine, December, 1907; Journal of the American Medical Association, January 25, 1908).

PYELITIS, INFECTION IN.

There are reasons for believing that virulent micro-organisms may be carried along a healthy mucous canal with overcoming the resistance offered by the epithelial cells (if healthy) lining the tube, and that such organisms may be carried upwards (isolated in, and with their growth, possibly temporarily, inhibited by the normal mucus which lines the walls of the canal) to a portion of the urinary tract in which, owing to some stagnation or reversal of normal currents, or to some loss of resistance on the part of the epithelium, or possibly to some abnormality in the character of the protecting mucus, they can commence rapid and virulent growth. There are many examples of infection in which different organisms travel along mucous canals, such as the bronchi or the intestines, and only produce their pathological effect at the site of peculiar susceptibility or seat of election, such as the lower end of the ileum in the case of the typhoid bacillus, and when this organism (as frequently occurs) is excreted by the kidneys, little or slight inflammatory reaction is present locally in the kidney. The non-motility of the infecting organism in some cases of ascending pyelitis may be at first sight regarded as a difficulty on the supposition that the infection rapidly ascends the whole urinary tract, and first causes symptoms at the upper end or kidney pelvis and in the absence of any evidence of extension of infection by contiguous growth along the ureter. The question of the mucous canal route of infection as against the blood-stream route, in the case of organs communicating by their ducts with the exterior of the body, is one of general interest. The gallbladder and the gallducts come into the same category. Bond (British Medical Journal, December 7, 1907).

PYLORUS, ULCER AND STENOSIS OF THE, OIL IN THE TREATMENT OF.

The writer relates his experience with nineteen cases of gastric ulcer or pyloric stenosis in which great benefit was derived from small amounts of oil, taken three times a day. It was remarkable how rapidly the pain was relieved and

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the debilitated patients recovered strength. This was most evident in the cases of enlargement of the stomach from spasm of the pylorus. Almost complete cure was realized in a few cases of severe stenosis, as this treatment restored the working capacity of the patients. All were out-patients, and some continued at work throughout the treatment. In private practice the author prefers oil of sweet almonds, changing after two weeks, if the patients desire, to "almond milk," that is an emulsion of a tablespoonful of pulverized sweet almonds in a glass of hot water, ingested warm, with peppermint drops afterward if desired. In winter an emulsion is preferred, made with or without belladonna, according to the following formula:

℞ Tincturæ belladonnæ, 5 gm. or ʒj.
Olei amygdalæ dulc., 30 gm. or ℥j.
Vitelli ovi uni.
Aquæ destillatæ, ad 200 gm. or ℥j.
M., f. emulsio.
Sig.: A tablespoonful three times a day.

The proportion of oil can be increased or reduced according to the severity of the case. In some cases pure olive oil or linseed oil is given. W. Bloch (Archiv für Verdauungs-Krankheiten, Bd. XIII, Nu. 6; Journal of the American Medical Association, February 8, 1908).

RACHITIS.

The writer deplores the lack of attention by parents and physicians to the early symptoms of rachitis. It is a disease of the well-to-do as well as of the poor, and it is an error to assume that because some of the typical symptoms may be lacking the disease is not rachitis. The beading of the ribs comes nearest to being a constant sign, and the abnormal softness of the thoracic walls may be first apparent from the sinking in of the chest walls during inspiration in some acute respiratory affection. This is a serious handicap to the child, increasing the danger of pulmonary disease and crippling the respiratory function. This softened thorax and the nervous instability of the disease are the greatest dangers and make the prophylaxis most urgent. The disease may begin before the fifth month; just how much earlier is uncertain. After that it is recognizable with increasing frequency and may be most marked during the second year. It should be the physician's duty to detect the condition in its incipiency, even in nursing infants, when he should endeavor to improve the hygienic conditions. especially by attention to the mother's diet, checking the tendency to prolonged lactation and other remedial measures. While in the earlier months prophylaxis and treatment are practically the same as that of malnutrition in general, after the fifth and sixth month certain measures begin to have a definite value. Fresh orange juice has a beneficial effect in rickets as in scurvy, and at this period or even earlier it is well to begin the use of pure cod liver oil, beginning with small doses and increasing with tolerance to half a dram three times a day. More attention should also be given to securing an adequate supply of proteid in the infant diet, and by the seventh month the administration of beef juice once daily or the white of one egg will be of assistance. In older children who have entered on their second year scraped rare meat pulp and soft boiled eggs are useful. The intelligent management of starch-containing foods is important, but it is not necessary to cut them off entirely when any consider-

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able degree of intestinal indigestion and distension is not present. The value of codliver oil given for long periods is incontestable. It is also one of the best mediums for the administration of phosphorus, which the writer considers a valuable remedy to cut short the more acute symptoms and especially for the rachitic instability of the nervous system. Its effects on the osseous system are less promptly apparent, and this may account for its disuse. Its combination with codliver oil has been more effective than codliver oil alone, and the writer can recall but two cases in which he suspected it was not well borne. The further consideration of the special value of phosphorus in cutting short the acute and progressive stage of this disease is asked for by the author. T. S. Southworth (Journal American Medical Association, January 11, 1908).

RHEUMATIC FEVER, ACUTE.

Acute rheumatism is recognized by the author as an infectious disease, due probably to any one of a group of organisms, possibly cocci, allied to the organisms of scarlatina and erysipelas. He also admits a certain constitutional susceptibility or diathesis intimately related to nervous function, and especially with the vasomotor apparatus and perhaps also with the tissues of the organs of circulation. The medicinal treatment, largely empirical, that has been found useful—the precordial blisters, the use of alkalies, which has a sort of clinico-pathologic indication in the abnormally acid condition of the body fluids, the use of the tincture of the chloride of iron and the salicylates—is reviewed. The use of the latter, together with the alkalies, is not contraindicated, and the writer generally uses them in combination. Ferric medication can also be associated in the "mistura ferro salicylata," introduced by him. Special care should be given to the condition of the mouth, nose and throat, and avoidance of exposure to drafts for susceptible individuals. The resistance of the vasomotor system can be increased by such measures as massage, electric light baths, and hydrotherapy. Regular and sufficient elimination is a necessary prophylactic measure and a regulated nutritious diet yielding a minimum of nitrogenous waste. The carbohydrates should be reduced and oils and fats substituted so far as possible. The diet, however, should be individualized to suit the case.

The management of the attack is described in detail; the diet should be milk exclusively for at least two weeks, and longer if necessary; the bowels should be kept open and the urine alkaline, but the most important measure is complete rest, and it depends on the case whether this is enforced for six weeks, which is the writer's minimum, or whether it be continued to nine or ten weeks more. The great majority of subsequent chronic cardiac lesions are beyond question due to the neglect of the rest.

Local treatment must be guided by the general condition and the patient's special needs; there are many applications and most of them are useful unless the patient has some idiosyncrasy. If the heart becomes involved during the attack, the blisters and alkaline treatment can be kept up, but unless the articular symptoms are still severe, it is usually best to discontinue the salicylates. The author speaks highly of the value of rectal and, in severe cases, of intravenous injections of colloidal silver in cardiac complications, although it cannot be said that they are always curative. Bromide of strontium or am-

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monium may be useful in quieting restlessness; a precordial ice coil or ice bag is useful. The two principal things insisted on in the treatment of acute rheumatism and its complications are individualization and rest, and the latter in all cases is the measure of supreme importance. S. Solis-Cohen (Journal of the American Medical Association, December 21, 1907).

RHINITIS, MEMBRANOUS.

Notwithstanding the frequent descriptions of this condition, it is frequently overlooked even by specialists in nose and throat disease. A bacteriological examination of a culture from the nasal membrane or the discharge will usually reveal many diphtheria bacilli. It usually occurs in children who may be in a fair general condition, running from the nose, slight bleeding, and nasal obstruction being pronounced symptoms. The mucous membrane of the nose is congested and covered with a more or less dense and tough membrane. The pharynx is usually normal in appearance. The disease usually continues four to six weeks. The patient should be isolated as in well pronounced diphtheria, antitoxin should be injected, and the nose irrigated. Removal of the membrane by force does no good, as it will immediately reform. Though this is considered a mild form of diphtheria and should be treated as such, it will not communicate to a susceptible person diphtheria in a severe form, but only a similar rhinitis or a sore throat with a small patch of exudate. Rose (Practitioner, January, 1908).

SEPTAL PERFORATIONS, PLASTIC OPERATION FOR THE CLOSURE OF.

Before ultimate success can be expected in the closure of septal perforations, certain imperative requirements must be considered. Due attention must be paid to the preserving of the blood-supply; a double flap must be provided for the aperture with an intact membrane under every seam; cartilage must not be left denuded; and the few stitches which are inserted must not produce tension. The writer has devised an operation in which a flap, attached above and below, is pulled forward over the aperture on one side, and a similar flap pulled back on the other, thereby providing an intact membrane opposite each seam, and practically closing the aperture. Burton Haseltine (The Laryngoscope, October, 1907).

SPINAL ANÆTHESIA, PRESENT STATUS OF.

The writer draws the following conclusions from a series of 22,717 cases of spinal anæsthesia. Tropacocain is at present the least dangerous anæsthetic, though even it may be followed by complications or even death. The dose should be rather too small than too large, 0.06 gramme (1 grain) being about an average dose. By elevation of the pelvis and the withdrawal of a copious amount of fluid, one gets the highest-reaching anæsthetic with the least danger. The addition of adrenalin appears to be more harmful than beneficial. Most careful attention to all details of technic is necessary in order to avoid danger. The average duration of anæsthesia is one hour. The method is indicated in all cases of old decrepit patients in whom narcosis is unsafe by other methods, as well as in non-tubercular lung disease and in diabetes. It is contraindicated in all children up to fifteen years of age, in neuro- or psychopathic conditions, in disease of the brain or cord, in septic diseases, and in all

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cases which can be operated on under local anæsthesia. Care must be used in cases of tubercular processes, in syphilis, in renal disease, and in marked arteriosclerosis, especially of the cerebral vessels. Though spinal anæsthesia offers many advantages in properly selected cases, it is never without danger. M. Strauss (Deutsche Zeitschrift für Chirurgie, Bd. LXXXIX, Hft. 1-4, 1907; Boston Medical and Surgical Journal, January 23, 1908).

SUPPURATIVE PROCESSES, ARTIFICIAL HYPERÆMIA IN.

According to the theory of Professor Bier, Nature always meets irritation with the same weapon, namely, hyperæmia. This is readily seen either by scratching a sterile skin with a sterile needle or by infecting any organism with any irritating or poisonous germ, or, most commonly of all, by the reaction of the part when a small splinter is lodged in the skin. The object is to increase the blood-supply to the affected or the infected part and by so doing to increase the supply of leucocytes, and by this means either to destroy the infective germs or, by an increase of serum, to dilute the poison till harmless, or to wash away the débris of infection.

By means of artificial hyperæmia we can often abort an infective process and save the breaking down of tissue, or, if at the beginning of treatment the process has gone on to the breaking down of tissues, the hyperæmic method assists in quickening the process of expulsion of the products of infection and also the process of repair. J. H. Beaty (Journal Minnesota State Medical Association, January 15, 1908).

SYPHILIS, SERUM DIAGNOSIS OF.

Attention is called to the necessity for a means of certain diagnosis when the question of syphilis arises, and the writer believes that it will be found in the serum reaction to syphilis. He describes in detail the principle of serum reaction and its application in syphilis, and says that while in infectious diseases ordinarily the immune bodies disappear during or soon after convalescence, antibodies may be found in syphilis thirty or even fifty years later. It is of importance to the syphilitic to be able to find out how long after effective treatment he remains free from antibodies and probably from active syphilis; for the examinations already made indicate that he does not remain free permanently. The serum reaction may prove a guide to check up and control the patient's destiny, and, possibly to pilot him clear of assaults on his nervous system that result in cerebrospinal syphilis, the parasyphilitic affections, or visceral lues. Especially is the regular methodical use of this method indicated as an index for treatment by watching for the recurrence of immune bodies instead of awaiting the development of evident later manifestations of the disease. W. J. Butler (New York Medical Journal, November 30, 1907).

THROMBOSIS, ETIOLOGY AND TREATMENT OF.

Basing their views on studies of the coagulation of the blood, and examining mainly the blood of convalescent typhoid patients in whom the dangers of hæmorrhage have been passed, the authors conclude that the most common predisposing cause of thrombosis is the absorption of tissue juices into the circulation and the active cause is the increased coagulability of the blood.

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Blood which is received from a vein through a cannula into a glass lined with paraffin will not clot because no tissue juices are allowed to mix with the fluid. The authors believe that this absorption of tissue juices into the circulation occurs after a severe hæmorrhage. In the infectious diseases the volume of blood is depleted by high fever, profuse sweating, diarrhœa, internal hæmorrhages, and here again the body juices are absorbed into the general circulation.

Almost every delivery is accompanied by at least a slight loss of blood, often quite a decided loss. This is especially true of the primipara, where lacerations are more apt to occur. The authors have found that a calcium content of the blood does not always mean a quick coagulation, and vice versa. They believe that in all medical or surgical conditions in which hæmorrhage proves a factor, the coagulation of the blood should be carefully observed and at the first indication of increased coagulability prompt prophylactic treatment should instituted. The blood-vessels should be kept well filled by encouraging the patients to drink water freely, by hypodermoclysis and enteroclysis, and by the administration of citric acid in some palatable form. H. A. Duncan and G. M. Illman (New York Medical Journal, December 31, 1907).

TONSILLAR HÆMORRHAGE AND ITS SURGICAL TREATMENT.

The objection of many operators to tonsillectomy is the fear of hæmorrhage, but the danger is really less than if tonsillotomy is performed, because of the inability of the blood-vessels to retract after the later operation on account of the diseased condition of the tonsils. Spurting blood-vessels should be controlled by twisting them with a hemostat, and oozing by pressure. Partial removal is an easy operation, but the author condemns it, believing that it seals up the glandular tissues of the deeper portions of the tonsil under bands of cicatricial tissue, which forever will interfere with throwing off of leucocytes, secretions, epithelial, and other *débris* which for years will continue to be produced if any glandular tissue is left behind. Tonsillotomy also opens up greater avenues of entrance for the infectious material of various diseases, such as rheumatism, arthritis, endocarditis, tuberculosis, etc. Chevalier Jackson (Annals of Surgery, December, 1907).

TRICHINOSIS OF THE UPPER RESPIRATORY PASSAGES.

If trichinosis occurs in 5 per cent. of man, then it must be generally overlooked, or the invasion must be too mild to attract attention, as the number of observed cases is vastly out of proportion to the post-mortem findings.

Since in a moderate number of the cases observed, the upper respiratory passages are involved, is it not probable that throat trichinosis is more common than hitherto believed, and has it not generally been mistaken for something else? In doubtful or peculiar, acute or subacute inflammation of the pharynx and larynx, a differential blood-count should be made. The presence of eosinophilia is not an absolute proof of trichinosis, but it is the strongest evidence, excepting the finding of the cysts. J. E. Mackenty (American Medicine, February, 1908).

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TUBERCULIN, CALMETTE'S OPHTHALMIC REACTION TO.

From the results of the authors' work, they are convinced that the ophthalmic reaction as directed to be practiced by Calmette and others is of undoubted service in the diagnosis of tuberculosis. In no case where its worth could be tested clinically by the finding of tubercle bacilli, did they fail to obtain decided ocular manifestations following the instillation of the tuberculin. This reaction did not follow when instillations were made in the case of 126 individuals affected with diseases other than tuberculosis. It was not obtained in 74 apparently normal adults.

A proper technic for administration is necessary for the success of the reaction. Whether or not smaller dosage would produce recognizable effects is not at present fully decided. Reactions have, however, been obtained when suspensions of 0.5 per cent. were used.

When positive reaction follows promptly on the first instillation, it appears that the diagnosis of tuberculosis is reasonably certain. The fact that a reaction thus appears does not mean that the subject is affected with an active tuberculous process, although the evidence is strongly in favor of such. Presupposing this might, in some instances, lead to unnecessary alarm and much inconvenience. The ophthalmic reaction, as is the case with every form of tuberculin test, must be accompanied by complete examination of the suspected focus in order to be judged properly. All suspicious cases which fail to respond to one instillation should be reinstilled from two to five times and careful examinations, local and general, made after each instillation.

According to the authors, too little work has as yet been done to allow conclusions to be drawn regarding the relative value of ophthalmic reaction, the subcutaneous or the skin reactions to tuberculin. In seven of their cases in which both the subcutaneous and ophthalmic reactions had been tried positive evidence was furnished in each case. They have had no experience with the cutaneous reaction. None of the reactions take the place of thorough examinations of the patient, from every viewpoint. They are all confirmatory. Properly administered, it is believed that the accumulation of more data will show that the ophthalmic reaction is quite as valuable to the general practitioner as are any of the others. Its convenience and rapidity of action certainly commend it. Frank Smithies and R. E. Walker (Journal of the American Medical Association, January 25, 1908).

TUBERCULOSIS.

The writer inquires on what the curability of tuberculosis depends, and goes on to state that the important factors are the virulence and numbers of the infecting micro-organisms and the resisting power of the affected individual. The results of variations in these three factors are discussed in detail, and the author then deals with the various measures that combat them in a curative direction.

Early diagnosis is of importance because a limited focus of disease can be dealt with before the resisting powers are too much depressed. Fresh air gives better nerve tone, improves appetite, and aids assimilation, thus also increasing the resisting power. Forced feeding is deprecated by the writer, because what is the most desirable is not the most fat, but the highest state of nutrition. For this a selected dietary,

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suited to the digestive, assimilative and excretory powers of the patient is required. Too much stress must not be laid on the gaining of weight.

Wright's inoculation method is discussed by the writer, and he concludes that when inoculations are added to the ordinary hygienic dietetic methods, the disease shows less tendency to spread, the patients develop fewer tuberculous complications, and a greater percentage of individuals are cured, than when hygienic and dietetic methods alone are used. F. M. Pottenger (Medical Record, January 25, 1908).

TUBERCULOSIS, DIAGNOSIS OF, BY CUTANEOUS TUBERCULIN VACCINATION.

The cutaneous tuberculin vaccination commends itself because of its simplicity of application, and because it is unattended by any febrile reaction. The technique is described by the author as follows: A 25 per cent. solution of old tuberculin in salt solution should be made. A similar dilution is used in which one volume of a 5 per cent. solution of carbolic acid in glycerin is substituted for one of the volumes of salt solution. Two drops, one of each solution, separated from each other by a space of two inches, should be placed on the outside of the arm, which should be prepared as is customary for vaccination. A small lancet, with a dull tip, which is about one-sixteenth of an inch wide and placed vertically in a metal handle, is used to abrade the skin through the vaccine drops by a rotary motion, removing only upper layers of epidermis. The tip is then cleaned, and at a point midway between the vaccination marks a third abrasion is made, without any tuberculin being applied, to serve as a control. If the reaction is positive a papule, varying in size from five to twenty millimeters in diameter, at first bright red, later becoming a dark red with a slight areola, will appear at either vaccination point, in the first twenty-four hours; occasionally they are delayed to the second twenty-four hours. Sometimes little vesicles with turbid contents, later becoming confluent, appear over the inoculation site. These fade and disappear in course of several days, leaving at times a little pigmentation. In positive cases in which revaccination is practised similar reactions result. In localized tuberculous processes, as of the glands and bone, the reaction is especially marked in contrast to the milder reaction seen in persons who have healed foci. At the control point, and at all three points, in case the reaction is negative, the slight reddening that follows the scarification disappears in twenty-four hours without any further changes. W. J. Butler (Medical Record, February 1, 1908).

TUBERCULOSIS OF THE UPPER AIR PASSAGES, POTASSIUM IODID AND MERCURY IN.

Cases are reported to sustain the assertions in regard to the frequently beneficial action of potassium iodid and of mercury on primary tuberculous processes in the nose and throat. Syphilis could be positively excluded in these cases, and the author thinks that some of those that have been published as syphilitic affections of the upper air passages, simulating tuberculosis and cured by potassium iodid or mercury, were in reality purely tuberculous processes. K. Grunberg (Münchener medizinische Wochenschrift, August 6, 1907; Journal of the American Medical Association, October 5, 1907).

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TUMORS: TREATMENT.

The favorable effect of Roentgen rays on epithelioma is indisputable. The treatment with Roentgen rays must not, however, be considered in a category by itself; it must rather be looked on as an alternative or as an addition to treatment by other methods. There are obviously biologic differences in the various kinds of epithelioma which have so far not yet been sufficiently explained pathologically and anatomically and on which the success of the Roentgen treatment is dependent. To aid the effect produced by the Roentgen treatment small operations may be done and the cautery applied according to the nature of the case. In those cases in which no favorable influence is produced by the Roentgen rays, at the latest after the fourth or fifth sitting, this treatment must be discontinued, as little more is to be expected from it. The intervals between the single sittings must not be too long; a more active Roentgen light—medium soft tube—with, of course, a careful covering of the healthy parts of the skin, is to be recommended. In surgical operations a subsequent application of rays is eventually desirable. It is of an especial importance to lay stress on the fact that by the application of Roentgen rays the patient is saved from an operation, and the result produced by the Roentgen treatment is not only equally good as regards the cure, but much better as regards the subsequent appearance. E. Schiff (Lancet, November 23, 1907).

TUMORS, TRYPSIN IN THE TREATMENT OF MALIGNANT.

The only apparent effects the writer has been able to produce is by the injection of trypsin directly into the cancerous mass. This experience is confirmed by the experiments of Von Leyden. Shaw-Mackenzie, on the other hand, advises the administration of the drug only through the circulation and at a distance from the tumor. When all is said, therefore, it cannot be claimed that any great advance has been made in the actual cure of cancer by the use of trypsin. Nevertheless, the scientifically established fact that trypsin has a specific destructive action on the cancer cell and on the deadly ferment which it secretes, gives at least a gleam of hope that an effective method of applying it may be discovered. W. P. Graves (Boston Medical and Surgical Journal, January 23, 1908).

TYPHOID FEVER, HÆMORRHAGIC.

Hæmorrhage from the bowel in typhoid fever is especially to be dreaded on account of its frequency, its inadequate treatment, and its dire results. Epistaxis is also one of the classical symptoms, but is not believed to occur in more than 31 per cent. of typhoid cases. Hæmorrhage may also occur from the stomach, tonsil, and ear. It is occasionally an accompaniment of the hæmorrhagic diathesis, and is more frequent, when of this type, in childhood and adolescence than in adult life. The hæmorrhagic tendency is usually observed in cases which otherwise run a mild course, and its presence makes the prognosis much less favorable and demands the most thoughtful consideration. It has been observed at the height of the disease, toward the end, and in relapses. W. W. Woodward (Archives of Pediatrics, November, 1907).

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Book Reviews

A Text-book of Physiology. By Isaac Ott, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Second Revised Edition. Illustrated with 393 Half-tone Engravings, many in Colors. Royal Octavo, 815 Pages. Bound in Extra Cloth. Price, $3.50, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

The second edition of Dr. Ott's "Physiology" is a great improvement over the first. The fact that 240 pages have been added fully demonstrates this fact. The changes bear mainly upon the sympathetic system, which has been practically re-written. This applies also to the subjects of vision and to the intestinal peristalsis, which embodies the author's valuable labors on that subject in the Medico-Chirurgical Laboratory.

The work gives a faithful picture of physiology as it is taught in medical schools to-day —and though it disregards that great mine of physiological information, clinical medicine— is nevertheless a safe guide for the practitioner.—C. E. de M. S.

The Treatment of Fractures: With Notes Upon a Few Common Dislocations. By Chas. L. Scudder, M.D., Surgeon to the Massachusetts General Hospital. Sixth Edition, Revised and Enlarged. Octavo Volume of 635 Pages, with 854 Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1907. Polished Buckram, $5.50 net; Half-Morocco, $7.00 net.

Probably no branch of the general practice of medicine tests the ability and skill of the physician more than the diagnosis and treatment of fractures, especially if they are at all obscurely situated, as around a joint or deep in the soft parts. It is true that radiography has filled a large gap in this direction, but an X-ray apparatus is not convenient to every man, and in itself has practically nothing to do with the treatment of the case beyond the determination of the position of the fragments from time to time.

In the new edition of Scudder's book, the author continues to adhere to his original purpose of presenting in concise and illustrated form, efficient methods of treating the common fractures. The wisdom of operating on certain fractures has been considered at some length in this edition. New illustrations and new X-ray pictures have been added. Important recent papers have been recorded in the Bibliography. Especial attention has been directed to obstetrical skull fractures of the newborn; to fractures of the zygoma, of the malar bone, of the superior maxilla, of the head and neck of the radius, of the neck of the femur and of the carpal scaphoid; to pathological fractures; to old fractures of the radius, and to Volkmann's contracture. Toward the end of the book some forty pages are devoted to the consideration of a few dislocations, including those of the elbow and of the acromio-clavicular joint.

Repeated and frequent inspection of a fracture after it has apparently been reduced is strongly advocated.

The popularity of this work, which is to-day classed as one of the foremost authorities on factures, is manifested by the exhaustion of five editions and the appearance of the sixth in comparatively few years. As the high standard originally set by the author is closely observed in the present volume, the added material in this new edition should make it invaluable, not only to the general practitioner, but to the surgeon as well.—R. B. S.

The Internal Secretions and the Principles of Medicine. By Charles E. de M. Sajous, M.D., Fellow of the College of Physicians of Philadelphia; Member of the American

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Philosophical Society, the Academy of Natural Sciences of Philadelphia, etc.; Knight of the Legion of Honor and Officer of the Academy of France; Knight of the Order of Leopold of Belgium, etc.; Formerly Lecturer on Laryngology in Jefferson Medical College and Professor of Laryngology and Dean of the Faculty in the Medico-Chirurgical College; Formerly Professor of Anatomy and Physiology in the Wagner Institute of Science. Volume Second. With Twenty-five Illustrations. 1097 Pages. Cloth, $6.00; Half-Russia, $7.00. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, 1907.

This is not alone an epoch-making work, as the publishers describe it. It is essentially a work which revolutionizes the practice of Medicine from its therapeutic standpoint. He who reads it, digests it, inwardly marks its contents, will be able to practice medicine from a rational standpoint and no longer from the shot-gun policy which hitherto has too often characterized the science. The therapeutic nihilist of the Osler type, after perusal and study of these volumes must perforce be obliged to admit that after all "something good may come out of Nazareth."

The revered teacher in anatomy of the writer, Oliver Wendell Holmes, deserted Medicine on account of its uncertainty. He sought a more accurate and more certain pursuit, the teaching of anatomy. He was wont to say that he could take a half dozen drugs from the multitude in the Pharmacopœia and could thereby alleviate symptoms, but he did not think he could cure one disease with the possible exception of malaria. Thus, he could mask the symptom pain by the use of opium. He could improve the condition of the blood by giving iron. He could move the bowels through the administration of salts. But, beyond this, he felt his impotency from a therapeutic standpoint. Of late years Osler, the man of many cogent expressions, has, in a sense, plagiarized Holmes. Had either read these volumes the world would have lost a great teacher of anatomy and a most charming and versatile writer, but the world would have gained two expert therapeutic positivists, at the loss of two expert therapeutic nihilists. But what wonder! Until the appearance of these volumes, therapeutics was even like unto the desert of Sahara! The thinking physician longed for the Water of Truth, and he, even as has the writer, thirsted!

The quarter century gone by has witnessed the importation, from Germany in particular, of many synthetic compounds and the enterprising pharmaceutical chemist at home has deluged us with scores of curiously denominated formulæ, of varied and, too often, uncertain composition. The average physician has fallen an easy prey to these seductive importations and home-made "multi-pharmaceutical" compounds, and, either too lazy to consult his pharmacopœia or too ignorant to possess one, he has ordered them for his reliant patients, and, when they have recovered, he has given the credit to the unknown quantities—thus posing unconsciously as a benefactor to the foreign manufacturers or the domestic purveyors, in ignorance of the fact that, after all, Nature may do much.

He who reads and digests these volumes will find that disease is envisaged from a different, from a logical standpoint. The cause, the origin of disease is sought out and then analogically, the rational therapeusis is established. No shot-gun prescription need be written. Either the internal secretion of one or another ductless gland is at fault, and if so, rationally, that secretion demands increase. And the means of increase or, on the other hand, of diminution is at our disposal, and through influence on the pituitary gland. Such is the kernel of these volumes.

The writer can only speak from the standpoint of a surgeon with practice limited for many years to the pelvis and the abdomen, but after nearly thirty years spent in the study and in the practice of medicine, first from a general standpoint and, for fifteen years, as an exclusive pelvic and abdominal operator, he must state that until now he knew little of rational therapeutics. And yet, from force of early teaching, he has been somewhat of a

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therapeutic nihilist. Now he feels, and all who read must similarly feel, that he is in a better position to cope with disease as he sees it.

Lest this notice appear eulogistic, the writer hastens to add that he trusts before the appearance of the next edition, Sajous will read carefully the recent views in relation to the toxæmias complicating pregnancy and the puerperium, as well as the convalescence from abdominal and pelvic operations. It makes the writer shiver to read the title "Puerperal Eclampsia." Sajous should rather study the toxæmias of pregnancy and the puerperal state. He must cease to lay so much stress on mere albuminuria. He must recognize the various types of toxæmia and differentiate them. Thus, indican in the urine, acetone and free acids should be laid stress upon, and a common and obscure type of toxæmia—acute yellow atrophy, deserves a better name than "eclampsia." Possibly, the therapeutic indications are the same, but let more stress be laid upon derivation and elimination, and one means is venesection, where the indication is present, and this is far superior to veratrum viride.

There are a few typogrophical errors, but these are excusable when we consider that the text covers nearly two thousand pages. The publishers are to be congratulated for the part they have played in enabling a tireless, energetic and scientific worker to place in reach of the profession such well-founded views.

The student should buy this work that he may start well-informed. The general practitioner will be such more than in name if he studies it. The specialist, in no matter what specialty he works, needs it for the benefit of his patients.—Egbert H. Grandin, New York.

Books and Monographs Received

The Editor begs to acknowledge with thanks the receipt of the following books and monographs:—

"Tumors of the Cerebellum." By John Wyllie, M.D., Hull, Eng. 1908.——"Rotunda Midwifery for Nurses and Midwives." By G. T. Wrench. 1908.——"Medical Lectures and Clinical Aphorisms." By Samuel Jones Gee. 1908.——Clinical Lectures and Addresses on Surgery." By C. B. Lockwood. 1907.——"Report of the Director of the Mint upon the Production of the Precious Metals in the United States during the Calendar Year 1906." U. S. Public Health and Marine-Hospital Service. 1908.——"Milk and its Relation to the Public Health." (By Various Authors). Public Health and Marine-Hospital Service, Washington, D. C. 1908.——"Criticisms on the Present Medical Curriculum." By Harry Beates, Jr., Philadelphia. 1908.——"A Rare Type of Perivasculitis Retinæ in a Young Woman, the Subject of Inherited Syphilis." By C. A. Oliver, Philadelphia. 1907.——"The Value of Systematic Bacteriologic and Microscopic Study in the Treatment of Gonococcal Conjunctivitis." By C. A. Oliver, Philadelphia. 1907.——"A Canaliculus Dilator for the Local Treatment of Stillicidium." By C. A. Oliver, Philadelphia. 1907.——"The Preventive Treatment of Transferred Ophthalmitis." By C. A. Oliver, Philadelphia. 1907.——"A Study of the Nativity, Sex and Age, Occupation, and social Condition of Three Thousand, Four Hundred and Thirty-six Cases of Senile Cataract Operated upon at the Wills' Hospital in Philadelphia." By C. A. Oliver, Philadelphia. 1906.——"The Submucous Resection of the Nasal Septum." By Lee Maidment Hurd, New York City. 1907.——"Test Card for the Illiterate." By C. A. Oliver, Philadelphia. 1907.——Evisceration of an Eyeball by a Single Mass of Heated Metal." By C. A. Oliver, Philadelphia. 1907.

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From the U. S. Department of Agriculture, Washington, D. C., the following:—

"Twenty-third Annual Report of the Bureau of Animal Industry for the year 1906." ——"Experimenta in Beef Production in Alabama." By J. F. Duggar and W. F. Ward.—— "Food Habits of the Grosbeaks." By W. L. McAtlee.——"Experiment Station Work XLV." ——"The Relation of the Southern Appalachian Mountains to Inland Water Navigation." By M. O. Leighton and A. H. Horton.——"Forest Planting on the Northern Prairies." By James M. Fetherolf.——"The Relation of the Southern Appalachian Mountains to the Development of Water Power." By M. O. Leighton, M. R. Hall and R. H. Bolster.——"Tests of Vehicle and Implement Woods." By H. B. Holroyd and H. S. Betts.——"Suggestions to Woodlot Owners in the Ohio Valley Region." By Samuel J. Record.——"Practical Forestry on a Spruce Tract in Maine." By Austin Cary.——"Consumption of Poles in 1906."——"The Analysis and Grading of Creosotes." By Arthur L. Dean and Ernest Bateman.——"The Germination of Vegetable Seeds." By Edgar Brown and Willard L. Goss.——"The Nut Weevils." By F. H. Chittenden.

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Sajous's Analytical Cyclopædia of Practical Medicine.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

THE AUTO-PROTECTIVE RESOURCES OF THE BODY—A NEW FOUNDATION FOR SCIENTIFIC THERAPEUTICS.[1]

BY CHARLES E. DE M. SAJOUS, M.D.

PHILADELPHIA.

IN acknowledging the honor your Executive Committee has conferred upon me by inviting me to address you this evening, Mr. President and Gentlemen, I must apologize for the many allusions to personal investigations that my remarks will contain. The reason for this seeming selfishness is readily accounted for: your committee believed that the newer conception of pharmacodynamics I have to offer, might prove of some interest not only to the members of the Therapeutic Society, but also to those of the pharmaceutical profession whom it gives us pleasure to welcome this evening.

Prof. John H. Musser, in a paper published three years ago in the *American Journal of Pharmacy*, stated that "just as the present compares with twenty years ago, one can see less and less of the use of drugs." While predicating from this deduction that twenty years hence "a minimum of drugs" would be used, he cited broncho-pneumonia and tuberculosis as examples of the value of rest, fresh air, and proper food. Sir Frederick Treves more recently gave vent to similar views; while recognizing that "the habit of taking medicines lies deep down in the hearts of the people," he too thought that the use of drugs would "be replaced by simple living, suitable diet, plenty of sun, and plenty of fresh air." Similar conclusions are often published by men of high standing. And yet can they, in truth, dispense with drugs? No experienced practitioner will deny that nine-tenths of our professional usefulness is based on pharmaceutical remedies. Not only do our

[1] Read by invitation before the American Therapeutic Society and the Philadelphia Branch of the American Pharmaceutical Association, May 7, 1908.

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patients crave active, militant protection and relief in the hour of suffering, but the physician knows through the teachings of practical experience that drugs are his legitimate and often trustworthy weapons of warfare, the strongest shield he has to interpose between his patients and the fell destroyer.

Closely allied to the air, food, and water apostles are the therapeutic nihilists who, like Professor Osler, believe in the doctrine of self-limited diseases and look on while Nature and the disease have it out. Dr. Abraham Jacobi who, in accord with the great bulk of the profession, considers expectancy as a synonym for loss of time and opportunity, characterizes this nihilistic attitude as a compound of ignorance and indolence, and as "a sin of omission which frequently arises to the dignity of a crime." Emphasizing, moreover, the truth of Dixon's doctrine that the tendency of all diseases is toward death, he urges—and sustains by illustrative cases—that lack of timely treatment is accountable for much loss of life. Indeed, we blame, and our courts sometimes punish mystic therapeutists, Christian scientists, etc., for similar reasons, and it becomes a question whether their attempt to afford some help does not exonerate them in the presence of our own therapeutic pessimists who supply nothing—except, perhaps, a correct death certificate if the patient happens to die.

Another most regrettable feature of present-day medicine is that public confidence in our professional efficiency is on the wane, as the frequent attacks in the lay press well attest. Disregarding totally the many sides of our professional work which should command appreciation, the incalculable benefits that thousands of noble and self-sacrificing men have bestowed upon humanity, many people who, in the moment of danger, at once seek our aid are not loathe to lapidate us when the occasion offers. Other countries, even the great European centers of learning, are equally militant. Thus, Professor Dieulafoy, of Paris, declared only a few months ago, that medical men are criticised on all sides: in public, in the drawing room, at dinner parties, on the stage, in the newspapers, etc., and that books, even, are written expressly to condemn the medical profession! The normal results of this campaign are that a multitude of innocent people are increasingly driven into the hands of quacks; that systems of practice based on mysticism and misrepresentation are steadily gaining ground, and that patent medicine vendors are accumulating untold wealth at the expense of the unwary.

What is the underlying cause of all this? An analysis of the causes of defection in our own ranks is, I believe, first in order. Indeed, as stated by Llewellys F. Barker in 1900, at the close of a century during which all sciences other than medicine had advanced at an amazing pace: "With many, pharmacotherapy, as a whole, is almost moribund."

Shall we, however, with Dr. Jacobi and other distinguished men of our profession, ascribe to ignorance the loss of confidence in remedies that some of its members betray? What physician would presume to assert that mercury in syphilis, quinine in malaria, iron in simple anæmia, arsenic in pernicious anæmia, thyroid extract in cretinism and myxœdema, antitoxin in diphtheria, digitalis in certain cardiac disorders, sodium salicylate in muscular

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rheumatism, strychnine in adynæmia, and many other remedies I could cite, are useless? And yet, Dr. Frank Billings wrote, in 1903, that "drugs, with the exception of quinine in malaria, and mercury in syphilis, are valueless as cures"; in 1907 these last vestiges of our glory must have vanished, for the president of a prominent British society, Dr. A. H. Brampton, took occasion to say, as a prelude to a personal expression of dissent: "Skepticism is in the air. Even in this society, if any daring member has introduced a subject bearing on medical treatment, it has been with an apologetic air and humble mien, well knowing that if his remarks had any reference to the utility of drugs in the treatment of disease, they would be subject to good-humored banter, and received by those sitting in the seat of the scornful with amused incredulity." May we not be dealing with an unwarranted prejudice against drugs rather than with ignorance? Again is it not among the best informed men of our profession that drug-nihilism prevails pre-eminently?

It should be attributed, it seems to me, to an entirely different cause—one, indeed, which is increasingly making itself felt from day to day. Bichat said over a century ago, "pharmacology, in its present state, is not a science fit for a methodic mind." Notwithstanding the enormous painstaking labor that has been devoted to the multitude of problems it offers, Bichat's estimate is still applicable—a fact emphasized by the oft repeated admission that therapeutics has not raised itself above the level of empiricism.

We all know, for example, that mercury is curative in syphilis; but how is this accomplished? This, as Manquat asserts in the last edition of his *Therapeutics,* "is impossible to say." Another mainstay in many diseases is iodine, not only the haloid proper, but its salts. Hare writes: "The physiological action of iodine, so far as its alterative powers are concerned, is absolutely unknown." The brightest star of late-date therapeutics, antitoxin, stands not a whit higher. H. C. Wood, after reviewing the more familiar theories of its action, including Ehrlich's theory, says: "It must be confessed that we have no positive knowledge of the manner in which this substance acts in infectious diseases." Another truly wonderful agent—particularly in myxœdema and cretinism—is thyroid extract, but, as to its mode of action, Laulanié tells us that "for the time being there is not even a clue to the solution of this problem." As to digitalis, H. C. Wood, Sr. and Jr., write: "In our experiments upon the exposed mammalian heart, we have seen in the final acts of digitalis drama happenings so curious that at present no proposed theory as to the action of the drug is sufficient." This obscurity applies more or less to all drugs administered internally.

On the whole pharmacology, which, as shown by Bichat's contemptuous remark, was in a deplorable condition early last century, was still, at its close, notwithstanding an enormous aggregate of sound scientific facts contributed by a host of brilliant scientists, "in a backward and unsatisfactory condition," as a great clinician, Sir Andrew Clark, once expressed it. Indeed, no one can deny that it has failed to keep pace with the other branches of medicine: diagnosis, physiological chemistry, histology, etc., which have steadily gained for themselves a place among the medical sciences. Although the most im-

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portant of all, and the one branch through which the public, the whole world, in fact, gauges our actual professional efficiency, therapeutics has ever remained a mere art. A remedy is still given because it has been found more or less efficacious in this or that condition by others, and the subdivisions headed "treatment" or "therapeutics" in our text-books are mere catalogues of drugs which are stated to be "particularly useful," "most efficient," "very valuable," "commonly employed," "of great value," etc., in this or that disease, and in which not an inkling is afforded as to *how* the remedy antagonizes the morbid process. Not only does this entail a source of error at every step, since it often happens that a drug indicated in one stage of the disease may be contra-indicated in another, but it leaves the conscientious physician in constant anxiety lest the agent prescribed empirically prove more harmful than beneficial. Hence the frequent, sometimes daily, change of remedies—to which shelves covered with pill boxes and small bottles attest—and, I may add, the ill-repute into which therapeutics has fallen.

Need we wonder that highly trained men, who have developed great keenness as diagnosticians and the highest attainable proficiency in pathological histology and chemistry, have lost faith in pharmacotherapy? Are we justified in attributing to ignorance their loss of faith in a system of administering remedies which is as irrational and archaic as the other departments of medicine are precise and modern? Indeed, it is merely *because pharmacotherapy has not kept pace with the immense strides of all other branches that it is, with many physicians,* as stated by Prof. Llewellys F. Barker, *"almost moribund."*

Next in order is the cause of this deplorable condition of therapeutics. Must we attribute it to the host of investigators in pharmacodynamics to whom I have referred? Even though experimental errors to which I will allude presently, might have delayed progress, I firmly believe that if there had not been insuperable obstacles in another direction, therapeutics would stand to-day among the most advanced medical sciences as a result of their labors. One of their number, the foremost sponsor of experimental therapeutics of our day, Horatio C. Wood, Sr., of our own city, and several equally eminent foreign colleagues, would long ago have given us a sound foundation for the intelligent use of drugs had their deductive reasoning not been handicapped at every step, by a feature of the question to which I called attention last year: *the shortcomings of physiology.*

To interpret intelligently the physiological action of alteratives and tonics. which are in daily use by physicians, for example, an accurate knowledge of general metabolism, the foundation of nutrition, is necessary. What is known on this subject, according to the late Sir Michael Foster, "consists mostly of guesses and gaps." The action of cardiac stimulants includes as main phenomenon slowing of the heart through the mechanism of inhibition. Physiologists, according to Langley, "are still far from any real knowledge of the processes involved in inhibition." Diaphoretics and sialagogues activate the sweat and salivary glands by causing vaso-dilation in these organs. As Chapman says: "Though numerous explanations have been offered of the manner

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in which the vaso-dilator nerves act, it must be admitted that none of them are satisfactory." The study of hypnotics and anæsthetics presupposes a knowledge of the process through which sleep is produced. According to Bradbury "the phenomenon is still enveloped in mystery." Analgesics and nerve sedatives and stimulants owe their action to modifications in the character of the impulses awakened in the nerves; but as Stewart says, "what the nerve-impulse actually consists in we do not know." This factor is intimately linked, in the action of antispasmodics and convulsivants, with muscular oxidation, but Laulanié writes "we are absolutely ignorant of the mechanism of organic oxidation." Purgatives, whether their effects be due to an increase of secretory or peristaltic activity evoke them through secretory or motor nerve-paths; but, as Langley states, the relation of the enteric nervous system to the cranial nerves "is at present a matter of guesswork." Emetics suggest the need of adequate knowledge of the process of vomiting, but, according to Foster, "the nervous mechanism of vomiting is complicated and in many respects obscure." To explain the action of diuretics the mechanism through which the secretion of urine is governed should be known; "as yet," writes Landois, "only the influence of the vasomotor nerves upon the filtration of the urine from the renal vessels is known"—which means that that of the secretory nerves is not.

In brief, every important subdivision of therapeutics thus finds itself deprived of the essential physiological knowledge upon which a rational explanation of its physiological action could be poised. And this does not apply to therapeutics only; pathology is suffering, and has suffered, all along from the same cause, since, after all, the morbid effects of bacterial toxins or endotoxins, poisons, toxic wastes, etc., act in the body as would poisonous doses of drugs persistently administered.

Is there any indication that physiologists will furnish the data we need to place pharmacology on the sound basis we so earnestly crave? I must frankly express the belief that, judging from present indications, the prospects are very discouraging. In the first place, a cursory glance through physiological literature shows that they devote very little work to the study of the physiological problems I have enumerated. In the second place they overlook the one source of information through which their own labors could be made promptly to bear fruit: that covered by the assertions of a great Russian physiologist, Professor Pawlow, that in many instances "the physician gives a more correct verdict concerning physiological processes than the physiologist himself," and that "clinical observation will consequently always remain a rich mine of physiological facts." In the third place I greatly regret to say that they are steadily deserting us. A physiologist, Dr. Meltzer, wrote, a few years ago: "Physiology is of medical parentage, was reared by medical men, and is still housed and fed by medical faculties. Still it is medicine against which its frequent declaration of independence is directed. Medicine is a practical science, and is too inexact, and physiology wishes to be a pure, exact science. It, therefore, tries to keep aloof from medicine, and manifests a longing for association with, or, better still, for a reduction

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to physics and chemistry." Time has only served to sustain this statement and to emphasize my own conviction that medicine, and particularly pharmacology, will not be redeemed from its present deplorable position as long as it will depend entirely upon physiologists for the elucidation of function.

This is not intended to mean that pharmacologists are not also open to criticism. But their shortcomings cannot be ascribed to a lack of effort on their part to elucidate the multitude of problems they are expected to solve; they are due, in my opinion, to errors of procedure and of interpretation in the course of their experimental work.

First among these is the belief that drugs given by the mouth, injected hypodermically or rectally, travel to the tissues and act upon them. Textbooks tell us, for instance, that digitalis excites directly the muscular fibers of the heart, and that the rise of blood-pressure and increase of pulse-volume are mainly due to the greater propulsive power with which the drug endows this organ. This is based on experiments in which the heart, partially or entirely detached from the animal, is caused to resume its beats by dropping upon it a solution of digitalin. That this experiment is misleading is suggested by various facts. The weakest solution that will act directly on the heart thus exposed is 1 part in 50,000. Now, a large therapeutic dose of digitalin by the mouth is ¼ grain which, dissolved in the blood-mass, would make a solution four times weaker: 1 to 200,000. Hypodermically, $^1/_{16}$ grain of digitalin produces distinct physiological effects, and yet this is only a solution of 1 to 800,000 in the blood-mass—a solution sixteen times weaker than is absolutely necessary to influence the exposed heart experimentally. The prevailing belief in this connection becomes absurd when to these figures we add the facts that the drug is chemically modified in the blood—when given orally, hypodermically, or rectally—long before it can reach the heart-muscle at all, and that a large proportion of the blood is constantly passing out into the lymph-spaces and vessels, thus necessarily carrying a correspondingly great proportion of the drug with it. Again, why is it, if digitalis acts directly on the heart, that it affects much more actively the right side of this organ than the left? If the blood carried it to the heart-muscle, both sides should be influenced similarly. Another suggestive fact is that division of the spinal cord prevents the effects of digitalis given internally; obviously if the drug acted directly on the heart-muscle, this procedure would not prevent its action. Need we wonder that H. C. Wood, Sr. and Jr., can still say in the last edition of their *Therapeutics* that "at present no proposed theory as to the action of the drug is sufficient"?

There is ample experimental and clinical evidence to show that it is upon the general nerve centers that the vast majority of our drugs act, and that the phenomena witnessed are those awakened by these centers or resulting from diminution or arrest of their functional activity. As stated by Prof. Charles Richet, of Paris, "all toxics (with rare exceptions) are hardly poisonous otherwise than through their action upon the *nerve-cell*. In the organism," adds this distinguished physiologist, "the nerve-cell, to the detriment of other cells: muscular, glandular, epithelial, is the most sensitive to toxic

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action." Such being the case, the most sensitive nerve-cells, those of nerve centers, are the first to feel the influence of the small doses of toxic that our remedies represent, and it is because of this that such a minute dose of aconitine as $^1/_{400}$ grain, for example, can depress the whole circulation, and cause muscular torpor and weakness and also, perhaps, tingling in the extremities.

A second experimental error which proves misleading in most instances is the use of anæsthetics in animals in which a remedy is tried. Ergot, for instance, had been regarded as a vaso-constrictor since its action had been at all seriously studied, when certain investigators, basing their assertion on hundreds of experiments, declared that this agent did not cause vascular contraction. But an examination of their work revealed that they used ether as anæsthetic, an agent which, as is well known, is a powerful vaso-constrictor. How could they possibly cause contraction of the vessels with ergot when these blood-channels were already contracted to their utmost limit by the ether?

A third source of error, one which prevents progress in our knowledge of the action of drugs that affect the cardio-vascular system, is the neglect of waste products as factors in the process. Although veratrum viride, for instance, has long been considered a powerful vaso-dilator, capable of causing the blood to accumulate in the deep and large vessels, thus depleting congested organs, recent experiments have suggested that this drug in reality constricts the arteries. But analysis of these experiments shows that the older view is the correct one, and that the vaso-constriction witnessed by the experimenters was not due to the drug. The large dose used had produced so intense a vascular dilation that catabolism of waste-products in the peripheral capillaries had been inhibited; and these wastes being, as is now well known, powerful vaso-constrictors, they overcame the vaso-dilator action of the veratrum viride and produced vaso-constriction.

A fourth and very misleading error is the experimental use of excessive doses in animals to determine the action of a remedy. In a recently reported study of the therapeutic action of potassium iodide, for example, the investigator administered to his animals doses which in man would represent 346 grains! The effects produced by such doses not only fail to exemplify the therapeutic action of the drug; they are those of intoxication. As stated by Hale White, "when a drug in moderate doses excites a function, in large doses it often paralyzes it." This applies to a large proportion of the experiments on record, and it is to this fact that the present ignorance of their physiological action must, in great part, be ascribed.

A fifth cause of confusion is the belief that because certain drugs, atropine, for example, paralyze nerve endings by acting directly upon them when locally applied, it produces the same effect through a similar process when given hypodermically or orally. If the smallest dose that will evoke a physiological effect when given internally, is used to prepare a solution with the entire blood and lymph (in which the drug also circulates) of a control animal of equal weight, it will be found inert; first, because the solution obtained is entirely too weak, and second, because it is chemically altered by the blood's antitoxic constituents. In the living animal, and particularly in the carnivora,

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this latter process is far more active than in shed blood, to such a degree in fact that blood drawn from an animal treated to a dose capable of producing marked physiological effects will prove inactive. The physiologists are the principal victims of this class of error—which applies to other alkaloids: pilocarpine, muscarine, nicotine, etc., employed by them, and many conclusions regarded by these scientists as sound are in reality defective and, therefore, misleading.

The sixth and last source of error I will submit is one which doubtless has cost many lives, namely: The assumption that certain phenomena produced by drugs are manifestations of a normal function. Digitalis, for example, is said to slow the heart by stimulating the vagus; that is to say, the mechanism of inhibition—a supposedly physiological function. But there is no ground for this assumption. In the first place, as Porter says, "the nature of the terminal apparatus by which the vagus inhibits the heart is unknown." In the second place, the coronaries and other arteries of the heart, contrary to what physiologists teach, are supplied with vasomotor nerves, as shown by microphotographs of these nerves in my work on the "Internal Secretions." Now, ample evidence is available to show that all the drugs which slow the heart do so partly by causing constriction of these cardiac arteries; that is to say, by reducing the volume of blood supplied to the heart wall. We are not witnessing a normal phenomenon, therefore, when under the influence of large doses of various cardiants the heart is slowed, but a morbid effect: weakening of the heart muscle, a factor to which the increased resistance of the general arterial symptom to the heart's contractions adds a cause of cardiac arrest.

Other examples could be submitted, but these will suffice, with the shortcomings of physiology previously enumerated, to suggest why therapeutics has failed to keep pace with the other branches of medical science; why, in other words, as Professor Sollmann, a medical member of the Council of Pharmacy of the American Medical Association, could write, regretfully doubtless, only last month: "A generation ago therapeutics was an art, promising to develop into a science. At present it cannot be classed as an art, nor as a science; it can only be classed as a confusion."

Need I further urge that new and more fruitful lines of thought are imperatively needed if the true worth of our profession, its humane purpose, and its very existence are to be perpetuated?

I believe that it is fully within our power as pharmacologists to remedy the prevailing state of things and to raise therapeutics to the dignity of a science. At no time in the history of the world has medicine been richer in solidly grounded experimental and clinical facts, precisely those we need to attain this most ambitious of our aims. We hear much of empiricism, the stigma of medicine as an art, but as Huxley once said: "All true science begins with empiricism, though all true science is such exactly in so far as it strives to pass out of the empirical stage." With the means now at our disposal we need only to strive, to eliminate forever from our escutcheon the

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blemish that "empiricism" implies. Hosts of workers, those to whom Oliver Wendell Holmes referred when he wrote

"Blest is he who knows no meaner strife
Than Art's long struggle with the foes of life,"

have lived a life of devotion to suffering mankind. They may not have left us as heritage a therapeutic structure, or even the foundation for one, but they have furnished the hewn stones out of which it can be erected. It is for us to build. We may speak of confusion to-day; but confusion likewise prevails before each pillar, each stone, of any great edifice has found the place assigned to it by the co-ordinating mind of the architect. *Therapeutics needs architects and builders to-day far more than it does experimenters;* and when that fact will be thoroughly apprehended a new era for medicine as a whole will begin; one that will ultimately lead to the highest of human accomplishments: the mastery of disease in all its forms.

It is the result of an effort in this direction, begun some twenty years ago, that I am about to outline. Therapeutics may not exist as a science, but a close scrutiny of all the branches of knowledge related to medicine convinced me that with the many sources of error, physiological and pharmacological, I have submitted, once overcome, the aggregate of sound scientific data at our disposal in literature would supply the elements necessary for an accurate knowledge of the action of drugs. Physiology, cytology, embryology, and the more comprehensive branches of which they form part, zoology and botany, physiological chemistry, and other branches had to be ransacked for what elucidative facts they might contain. I was overwhelmed by the treasures these auxiliary departments of science contained. Clinical medicine especially proved itself, in keeping with the previously-quoted opinion of Professor Pawlow, "a rich mine of physiological facts."

In submitting to you the briefest possible outline of the newer conception of the action of drugs my labors have suggested, I will introduce only what evidence is absolutely necessary to make my meaning clear, referring you for the rest to the two volumes of my work on the "Internal Secretions." During the balance of the hour allotted to this paper, I will lay special stress, however, upon a conclusion which appears of capital importance: that *we should look to the auto-protective resources of the body, and the laws through which drugs influence them, for a scientific therapeutics.* And let me add that I am no longer alone in advocating this principle. In 1903, only a few months after the first volume of my work had appeared, and before he could have learned its contents, an eminent clinician, Professor Hayem, of Paris, for instance, taught that the tendency of modern practice was to return to the views of Hippocrates, who believed in the *vis medicatrix naturæ;* "therapeutic weapons are wanted," declared the French clinician, "which will reinforce the defensive power of the organism." Need I add that the entire trend of medical thought is in this direction; that the study of immunity has captivated the best minds of modern times: Pasteur, Metchnikoff, Pfeiffer, Bordet, Behring, Roux, Ehrlich, and others? I am not departing from the legitimate field of science or of

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sound judgment, therefore, when I urge that when a disease is due to the presence of pathogenic bacteria, their toxin, toxic wastes, or any other poison, our aim should be to so enhance the defensive properties of the blood with our remedies, that the disease-breeding agents will promptly be destroyed and converted into eliminable end-products.

Granting that the remedies capable of doing this are known, we remain in the realm of empiricism unless we can ascertain how they act; *how,* in other words, the blood is caused by certain drugs to attack and destroy both germs and poisons. This small word "how" is a far reaching one, for it is upon our ability to meet its mandates that the standard of therapeutics as a science depends.

How then does any agent enhance the defensive powers of the body? Are we supplied with a mechanism which enables us to ward off disease—a mechanism whose activity we can enhance at will? This is the dominant problem that my labors have aimed to solve; they showed that such a mechanism does exist, and that it is built of a set of small organs regarded by Brown-Séquard as the producers of internal secretions, but the functions of which had remained obscure, namely: the pituitary body, the thyroid gland (including the parathyroids), and the adrenals which jointly form what I have termed the "adrenal system."

A brief review of the rôle of each of these organs is necessary before the action of drugs upon them can be defined.

The *pituitary body* is one of those unfortunate structures which histologists and physiologists relegate to the waste basket as "vestigial organs" when they cannot explain its functions. It is fortunate, in fact, that it is located below the brain, beyond the reach of surgeons, for there would have been a holocaust of pituitary bodies just as there has been a holocaust of appendices, ovaries, etc., unless resort to surgery had been checked by the appalling results of such a procedure. Indeed, when this organ is completely removed in adult animals, formidable symptoms ensue: the temperature and the blood-pressure recede; nutrition is inhibited, as shown by rapid emaciation, the intense weakness and the lowered metabolism. Dyspnœa, muscular co-ordination, intercepted by convulsions, follow, and, usually on the third day, the animal lapses into coma and dies. Conversely we find the pituitary causing opposite phenomena when it is the seat of hyperæmia, hypertrophy, or tumors which render it overactive. In the early stage of acromegaly, for instance, the general nutrition and muscular power are greatly increased. The overnutrition is such, in young subjects, that their stature often reaches that of giants.

The importance of the pituitary to life is further emphasized by the fact that the morbid symptoms and death caused by its removal, do not follow removal of the brain. As shown by the Cornell frog, Goltz's dog, and other examples, all the functions other than intelligence, are, after recovery, as perfectly performed as if the cerebral hemispheres were still present.

How does the pituitary so prominently influence the temperature, the blood-pressure, metabolism, and nutrition, all functions which affect the entire organism?

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Is it through the intermediary of a secretion as generally believed? Not a single proof is available in literature to show that the pituitary body secretes anything. There is ample evidence, however, contributed by such men as Cajal, Andriezen, Gentès, and others, to show that the pituitary is connected by nerves with the base of the brain. My researches showed, moreover, that these nerves were the beginning of a nerve-path which, passing by way of the bulb, the spinal cord, the upper sympathetic ganglia, and the splanchnic terminated in the adrenals. Not only did excitation or division of this path at intervals produce the identical phenomena observed after removal, excitation, or disease of the pituitary body, but the same procedures applied to the adrenals also provoked the same phenomena. Briefly, I found that the pituitary body and the adrenals were united by nerves, and that it was through the adrenals that the pituitary produced the various phenomena credited to it.

It becomes a question now as to how the *adrenals* awaken these remarkable effects.

Physiologists had been unable to discover the identity or source of an "internal secretion" shown by Bohr and other physiologists to be necessary to explain pulmonary respiration, in so far as the taking up of oxygen from the air was concerned. They had, admittedly also, failed to find the origin of 96 per cent. of the substance which distributes oxygen to all the tissues, the hæmoglobin. My investigations showed that it was the secretion of the adrenals which fulfilled both these functions. Being secreted into veins which opened into the inferior vena cava, it inevitably reached the lungs; being a powerful reducing agent it necessarily absorbed oxygen on being exposed to the air of the air-cells. Moreover, the previously unidentified albuminous component of hæmoglobin gave all the reactions of the adrenal secretion. A striking confirmation of the latter fact was recently contributed by Professor Mulon, of Paris, who found that the red corpuscles gave all the reactions of adrenalin.

The manner in which the adrenals awaken the various phenomena previously enumerated may now be accounted for. As their secretion is the substance which supplies oxygen to all tissues, their removal causes a lowering of the temperature and of the blood-pressure, arrest of nutrition, emaciation, great muscular weakness, and death—precisely the symptoms that follow removal of the pituitary body, the seat of their center. Conversely it explains how adrenal extract or adrenalin raise the temperature and the blood-pressure, *i.e.*, by enhancing oxygenation and metabolism in all tissues. The remarkable influence of the adrenals on life—in keeping with that of the pituitary body—is not only shown by the fatal effects of their removal, but also by the direct action of their products in sustaining life. As is well known, Crile, by means of injections of adrenalin in saline solution, was able to resuscitate animals fifteen minutes after all signs of life had ceased, and to keep a decapitated dog alive ten hours.

On the whole, the pituitary body through its connection with the adrenals governs the pulmonary and tissue respiration; that is to say, the life process itself.

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The pituitary body regulates the functions of another set of organs: the thyroid gland and its glandules, the parathyroids. The nerves from the pituitary to these organs were discovered by de Cyon, a Swiss physiologist, who pointed out that they caused dilation of the thyroidal vessels, increasing, thereby, the functional activity of these organs.

The *thyroid and parathyroids,* in the light of my researches, play an important rôle closely related to that of the adrenals. The purpose of their secretions, acting jointly, is to increase the vulnerability or sensitiveness of all tissues, waste-products, bacteria, etc., to oxidation, by enhancing directly the inflammability of their phosphorus. In other words, it causes all these bodies to burn faster under the action of the oxygen-laden adrenal product, the albuminous hæmoglobin. The efficiency of the latter, and the activity of metabolism in all tissues, is thus dependent in a great measure upon the presence of thyroid secretion of the blood. Important in this connection are the facts that owing to their high content in phosphorus, all nervous elements, including the nerve-centers, are especially sensitized by thyroid extract, and that their functional activity is correspondingly enhanced. The adrenal centers being subject to this action as well as all other centers, the thyroid secretion activates metabolism in two ways: (1) by increasing the inflammability of all cells, and (2) by exciting the governing center of general metabolism, that of the adrenals.

The wonderful action of thyroid extract in cretinism now becomes self-evident: the stunted stature recalls inactivity of the pituitary (overactivity of which, we have seen, breeds giants) and inadequate secretory activity of the adrenals. Thyroid extract causes the cretin to grow rapidly. This is evidently due to increased oxygenation since the temperature previously low, now rises to normal and often beyond. There is, indeed, a greater intake of oxygen, a greater output of carbon dioxide, and increased excretion of nitrogen—all proofs of enhanced metabolism. Every function, every structure, including the skin and hair, shows evidences of development and growth. The nervous system outstrips them all, however—owing to its wealth in phosphorus, we have seen; as a result the mental capacity improves, and ultimately, a normal average child is evolved from the idiotic dwarf that was.

This brings us back to the main subject of this address: therapeutics; but therapeutics relieved, in respect to the action of adrenal and thyroid preparations, and also, I may add, of iodine and its salts—of the odium of empiricism. We can now say HOW *adrenalin,* for example, acts. On entering the blood, it increases its oxygenizing power, as if a temporary exacerbation of activity of the adrenals had done so; hence its fleeting action. Of *desiccated thyroid* we can also say: it adds to the blood constituents of the thyroparathyroid secretion, which not only increases the inflammability of the cellular phosphorus under the action of the blood's oxygen, but in doing so it increases incidently the functional activity of the adrenal center, and therefore, the oxidizing power of the blood. Both conditions of perfect metabolism being met, the whole organism is endowed with new life when the doses are small but too rapidly consumed when the doses are large.

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Moreover, this furnishes the clue to the action of *iodine and its salts,* which, although their action we have seen, is admittedly unknown, are so valuable in practice that, as stated by Manquat, physicians use them when they are at their wits' ends. As is well known, thyroid extractives become inert when the iodine they contain is abstracted; it is at least in part to this haloid, therefore, that it owes its action. Iodine and its salts act much as do thyroid preparations, therefore—a fact confirmed in practice—but less actively, owing to the absence of the other components of the thyroid secretion, which give them, as suggested by Notkin, the character of a ferment.

The practical feature in this connection is that thyroid extract is capable also of increasing the power of the blood to destroy germs and their toxins. Grüber long ago urged that the defensive constituents of the blood were internal secretions; Wright holds a similar view concerning the opsonins; but neither of these distinguished investigators discovered their source. Now my own researches have shown that *opsonin* gives the reactions of the thyro-parathyroid secretion; that the oxygenized adrenal secretion, that is to say, the albuminous constituent of hæmoglobin, is Ehrlich's *amboceptor,* and that the main constituent of his complement is *trypsin,* the identical ferment through which, according to Metchnikoff, phagocytes kill and digest bacteria.

The process through which a thyroid preparation increases the auto-protective activity of the blood now suggests itself: it increases directly the opsonin which sensitizes what bacteria, toxins, toxic wastes, etc., may be present. By enhancing simultaneously the metabolic activity of all tissues, including the adrenal center, the pancreas and the phagocyte-producing organs, it thus endows the blood, the lymph, and the lymph glands with an excess of their bacteriolytic and antitoxic substances and cells, insures their destruction, and, at the same time, their conversion into eliminable end-products.

This introduces a feature of therapeutics which is at present absorbing the attention of the whole scientific world. How do Koch's tuberculin, Wright's vaccines, Coley's toxins, etc., produce their beneficial effects? Wright stated four years ago, referring to the protective agents of the blood, that if pathologists "knew the laws by which such substances were produced," they could "call forth a production of those substances."

I suggested several years ago that the anterior lobe of the pituitary body was not, as now believed, a secreting structure, but a sensitive organ which perceived, as it were, any poisonous substance that happened in the blood. I traced this organ throughout the entire animal scale down to such low forms as Mollusks. Zoologists having concluded that its purpose was to test the water ingested by these lowly animals for noxious substances, they gave it the suggestive name of *test-organ* or *osphradium.* My opinion that this organ exists in the higher animals was confirmed in Europe recently, Gentès having found histologically in the pituitary, a sensory structure similar to that of the olfactory membrane, a fact which suggests clearly its purpose: to detect the presence in the blood circulating over it, of any poison that it may contain, just as the organ of smell enables us to detect malodorous emanations which compromise the purity of the air.

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The manner in which tuberculin and other bacterial poisons produce their effects will now appear. On entering the blood they circulate throughout the entire body, including the pituitary body and its test-organ. Now, this structure proved histologically to be the sensitive surface—in the sense that the nasal olfactory membrane is a sensitive surface—of the adrenal center, or, better, the adreno-thyroid center, from which arise both the nerve-path, which I have traced to the adrenals, and the nerves which Cyon traced to the thyroid. On the other hand many investigators have found that during the course of infectious diseases—due therefore to bacterial toxins—the thyroid and the adrenals presented the characteristic signs of excessive functional activity, while the fact that these organs serve to destroy blood-poisons has been known ever since almost their functions have been studied.

On the whole, evidence from various directions points to the sensitive test-organ and its adreno-thyroid center as the structure excited by tuberculin, Wright's vaccines, Coley's toxins, etc., and to the adrenals and thyroid, which the adreno-thyroid center excites, as the organs which supply the blood with bacteriolytic and antitoxic substances, to which I will refer, henceforth, as "auto-antitoxin," its composition being, as I urged several years ago, the same as that of antitoxin.

The strength of this interpretation is sustained by the fact that the reaction produced by tuberculin and other bacterial vaccines corresponds with that caused by excessive functional activity of the adrenals and thyroid. No one, for example, denies that excessive oxidation underlies the production of fever, and no one will deny that fever, up to a certain limit, is a protective process; but "even if we grant," as Lazarus Barlow wrote recently, "that fever is beneficial, we are completely ignorant of the manner in which it acts." One can hardly realize that so commonplace a symptom should not as yet, with the enormous aggregate of scientific facts available, have been explained. The cause of this now suggests itself: neither fever or any other phase of the immunizing process could be elucidated before the adrenal system, that is to say, the pituitary body, the adrenals, and the thyroid, had been found to fulfill the functions I have described, particularly oxidation.

Essential in this connection is the fact that tuberculin and other bacterial vaccines are used as *remedies*. Interpreted from my standpoint: bacterial vaccines are beneficial, in a given disease, when they increase the efficiency of the body defenses in the manner described. But an important question imposes itself at this point, one bearing particularly upon the branch which interests us all, pharmacology. Can we, with our drugs, also enhance the efficiency of the defensive functions? Let me recall the fundamental principle I have previously urged, that *immunizing medication is the foundation of rational therapeutics.*

And this principle has borne fruit. A letter from an extremely competent and conscientious Virginia physician, Dr. C. F. Brower, received as these lines were being written, may be used to exemplify the tenor of others received: "My results are astonishing to me; and, to my assistant" (who was not as yet familiar with the newer conceptions), "they are astounding

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and incomprehensible." This refers to results obtained with the most familiar remedies of our pharmacopœia—to a therapeutics in which we can govern the efficiency of our defensive mechanism, just as an engineer can regulate the speed of a locomotive through the throttle valve—a therapeutics, in other words, in which our intelligence, and not empiricism, holds sway.

This does not mean, of course, that our resources are limited to fighting bacteria and the effects of their toxins, toxic wastes, and other poisons. They include the use of measures to counteract insomnia, pain, and other distressing symptoms, and also morbid developments in the course of disease such as cerebral or pulmonary congestion, paralyses of function, etc. To make this clear, I will close my remarks with a brief outline of the two or three main effects through which a few groups of drugs, tonics, analgesics, hypnotics, etc., counteract these morbid phenomena, referring you to the work previously mentioned for the action of other groups, a review of which would too greatly prolong this address.

A few explanatory facts are needed to facilitate your understanding of the principles I am about to submit: 1. The adreno-thyroid center, we have seen, receives the impulses it transmits to the adrenals and thyroids from the sensory test-organ, which resents, as it were, the presence of a poison in the blood, and awakens the protective reaction. To simplify the explanation of the mode of action of the drugs which evokes this defensive process in the blood, I will only mention the adreno-thyroid center, taking it for granted that you will understand that it is the sensitive surface of this center, the test-organ, which is primarily excited by the drug. 2. Not all drugs stimulate this organ; some depress it or anæsthetize it more or less actively, as will be shown presently. 3. Notwithstanding the fact that most drugs, in therapeutic doses, act primarily upon one or more centers, each drug acts specifically; that is to say, in a manner peculiar to that drug alone, or to the group of drugs to which it belongs.

In the case of one group of agents, those which provoke, through their action upon the adrenal system, the appearance in the blood of an excess of auto-antitoxin, a new term became necessary. That of "antitoxigen" appears to me to convey the intended meaning.

Antitoxigens.—The most active antitoxigens in infections and intoxications include some of the drugs now known as alteratives, the physiological action of which, we have seen, has remained obscure. *Thyroid* preparations are very active in this connection since they provide the blood directly, as previously explained, with an excess of opsonin to sensitize the bacterial toxins and other poisons. At the same time, by exciting the adrenal center, they incite the production of the other constituents of auto-antitoxin, and the genesis of phagocytic leucocytes. *Iodine* and the iodides act in the same way, but they provide less opsonin, since they only supply the thyroid and parathyroids with the main agent which enables these organs to increase their production of this sensitizing body. They are therefore far less active, in this particular, though they compensate for it, in a measure, but exciting more actively the adreno-thyroid center, thus enhancing oxidation to a greater extent. *Mercury*

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is well known in this connection, as the widespread use of calomel attests. Its salts act by exciting powerfully the adreno-thyroid center, thus providing the blood more evenly, as it were, than the two preceding agents, with all its defensive constituents. Their well-known action on the liver (since this is the organ in which the antitoxic process is most active) and in infections, especially syphilis, is due to this property.

A remarkable agent in this connection is *creosote,* so effective in pulmonary tuberculosis and pneumonia when judiciously used. Not only does it promote the formation of auto-antitoxin and phagocytes by exciting the adreno-thyroid center, but it depresses the center which regulates the caliber of the arterioles, causing these small vessels to dilate. As a result an excess of blood is admitted into all capillaries, including those of the diseased area, and as this blood is unusually rich in auto-antitoxin and phagocytes, the pathogenic bacteria and their toxins are vigorously attacked.

The solvent property attributed to alteratives is readily explained by the action of the opsonin or thyroid secretion which they directly or indirectly add to the blood, the increased inflammability of the phosphorus contained in morbid products, gummata, for instance, rendering them more amenable to the digestive action of the auto-antitoxin. This property, when exaggerated, becomes a source of danger, when too large doses of either of the above remedies are given, since the red corpuscles and the tissues themselves may then undergo dissolution—observations borne out by the familiar terms "hæmolysis" and "autolysis." Again, fever, we have seen, is due to a more or less marked increase of the auto-antitoxin in the blood, but if it exceeds 105° F. to any great extent, the bacteria are not only dissolved, but the red corpuscles are also exposed to dissolution.

Tonics.—The most active of these remedies also excite the adreno-thyroid center, but only sufficiently to enhance general nutrition. Practically all these agents, however, influence another center at the same time, usually the vaso-motor center. *Strychnine* is one of these, though it does not excite the adreno-thyroid center as actively as do mercurials, by stimulating also the vaso-motor center, it causes general vaso-constriction, and by thus driving the enriched blood into the tissue capillaries increases general nutrition. The beneficial action of *digitalis* in heart disorders is due to a marked stimulating action on the adreno-thyroid center. It also excites, however, the sympathetic center (to be described presently), which not only governs the caliber of the arterioles, but causes these vessels to propel the blood into the capillaries, and to increase thereby the nutrition of all tissues, including the heart-muscle. Its powerful action on the adreno-thyroid center causes the adrenal secretion to be produced in considerable quantity when large doses are given; as this secretion serves also, as I urged several years ago, to aid the contractions of the right ventricle, an excess of it causes the latter to contract with greater vigor than the left, the pulse becoming dicrotic, as noted by various authors. *Strophanthus, apocynum, convallaria,* and other heart tonics act in a similar way, but with less vigor.

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Quinine, on the other hand, acts indirectly. It does not excite the adreno-thyroid center, but the vaso-motor center. In large doses it causes such violent general vaso-constriction that the blood is forced into the peripheral capillaries, the brain, the ears, the conjunctiva, etc. Hence the headache, the tinnitus, etc. It protects against malarial infection by driving an excess of blood (including what auto-antitoxin it happens to contain) into the skin, thus augmenting the resistance to infection by the mosquito. Its curative power is due, as is well known, to its direct toxic action upon the plasmodium.

Hypnotics.—The most active of these agents, that is to say, the true hypnotics, produce their action by markedly depressing the adreno-thyroid-center. This is the action of *chloral hydrate,* for instance. As metabolism is thus slowed in all tissues, including the muscular elements of the arteries and veins, these vessels dilate and the blood recedes into the larger trunks, especially those of the splanchnic area. The volume of blood in the brain being reduced, sleep follows. *Paraldehyde, sulphonal,* and *trional* act in the same way, the two last-named, however, with greater violence, as shown by the cyanosis they sometimes produce—a self-evident sign of deficient oxygenation, the function over which the adrenals preside. The *bromides* are less efficient as hypnotics; but this is because they do not depress the adreno-thyroid center when given in anything except large doses. They depress the vaso-motor center and cause sleep, as does chloral, by causing general vaso-dilation and recession of blood from the brain.

Analgesics.—The cause of the prevailing obscurity as to the manner in which these agents relieve pain, is explained by the fact that the functions of the nerves through which they do so has also remained obscure. Although the vaso-motor center is located in the bulb, electrical stimulation of the pituitary body, as shown by Cyon, Masay, and others, causes an immediate rise of the blood-pressure. I found that this was due to the presence in that organ of a center, the search for which had been abandoned many years: that of the sympathetic system; and moreover that its purpose was to govern the propelling power of the arterioles which admit arterial blood into all capillaries. With this fact before us the action of analgesics becomes self-evident. *Antipyrin,* for example, relieves pain because it excites the sympathetic center in the pituitary and thereby causes excessive constriction of the arterioles; the volume of arterial blood circulating in the sensory terminals of the diseased area being reduced, the pain ceases. That this mechanism is the true one is shown by Sawadowski's observation that a section across the basal structures, that is to say, between the pituitary and the bulb, causes antipyrin to lose its action. *Acetanilid* and other coal-tar products act in the same way. So do *opium, morphine,* and other opiates. The hypnotic action of large doses of the latter agents is accounted for by the same process: the cerebral arterioles being also constricted and less blood circulating in the brain, sleep is produced.

Anæsthetics.—These agents differ totally from either hypnotics or analgesics in the manner they produce their effects. Chloroform, by exciting

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violently the vaso-motor center, first causes general vaso-constriction, and by thus driving an excess of blood forcibly into the capillaries of the cerebro-spinal system, produces the first stage of anæsthesia, that of excitement. True anæsthesia occurs when the vaso-constriction of both arteries and veins becomes sufficient to produce stasis of the blood in the cerebro-spinal capillaries, and to cause it to become prematurely venous: the functions of the brain being in abeyance, sleep and anæsthesia follow. The action of *ether* differs from that of chloroform only in that it does not excite the vaso-motor center as violently. *Nitrous oxide* produces anæsthesia by preventing the access of air to the venous blood and the adrenal secretion it contains while passing the air-cells: the adrenal secretion having failed to become oxygenized by the alveolar air, does so at the expense of the circulating blood after passing the alveoli. Hence the immediate cyanosis and the rapidity of the anæsthesia, the entire cerebro-spinal system being supplied with blood deficient in oxygen.

Vaso-Cardiac Depressants.—Veratrum viride, the most important of these agents, produces its effects by depressing markedly the vaso-motor center. All the vessels of the body being dilated, the blood recedes from the periphery to the deeper and larger vessels, excessive arterial tension and the resulting resistance of the blood-column to the heart's contractions are counteracted. This is the only remedy whose physiological action has, in my opinion, been known. *Aconite* produces its effect by depressing the sympathetic center, thus causing dilation of the arterioles and the penetration of an excess of blood into the capillary system. When large doses are given this capillary hyperæmia excites the peripheral end-organs of sensibility and tingling is caused, besides flushing, headache, etc.

These few examples must suffice to sustain the impression I hope to convey, that if, as stated by Professor Sollmann, therapeutics is now not even an art, but "a confusion," the painstaking labors of a host of investigators have afforded us all the factors necessary to at least elaborate a foundation for a system in which simplicity and precision supplant confusion. Indeed, I must emphasize the fact that although the action of each drug, as I interpret it, is devoid of complexity, it is based on a vast array of evidence—all of which converges towards the solution I urge. The action of mercury for instance, is sustained by the recorded results of 77 experimenters—to say nothing of the clinical data adduced.

Permit me to add that notwithstanding this simplified pharmacology, it is possible to select accurately the remedy that will meet the determining cause of a disease in its own field and, more than ever before, counteract its morbid effects. What may we not hope when, with your aid, our knowledge, from the mere rudiments I have to offer, will have reached a high degree of perfection? Not only will therapeutics have attained its merited position as a science, but it will have raised medicine itself to so high a plane in the public estimate that no one will even think of trusting health and life to any man or woman other than a scientifically trained physician.

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Publishers' Announcement

THE MONTHLY CYCLOPAEDIA AND MEDICAL BULLETIN, CONSOLIDATED.

BEGINNING with this issue THE MONTHLY CYCLOPÆDIA OF PRACTICAL MEDICINE and THE MEDICAL BULLETIN will be consolidated and published together under the above title.

The reason is apparent; this is an age of concentration and consolidation, rival enterprises, competing mercantile houses, banking institutions, schools and colleges. All the varied forms of man's ambition and activity, follow increasingly from year to year not diverging but converging lines. Greater economy is insured, a greater amount of information is vouchsafed and better results are attained.

The race in medical journalism is to-day for the periodical which in the smallest space, the least verbiage, the least repetition, save as much as possible the physician's time and labor, and still furnish him the maximum of new facts. The physician no longer reads for diversion, but for instruction; facts already old and often published, no matter how attractively presented, no longer satisfy; the days of the "rehash," be it never so attractively served, are passed. By the combination of the two above-mentioned journals all these various features are satisfactorily met. The subject matter which previously cost the subscriber to the two journals $3.00 will now cost him but $2.00; and the subscriber to the "Monthly Cyclopædia" who previously received only 44 pages will now receive 64 without extra charge; more information will thus be placed at his disposal; and he will thus be placed in a position to enhance his professional efficiency, and, therefore, his practical results.

The editorial management of both journals will remain the same. Dr. Shoemaker's reputation as a practical therapeutist is a guarantee that the "Medical Bulletin" section will be replete with practical suggestions of great value to the practicing physician. Dr. Sajous, whose discovery of the functions of the ductless glands is steadily revolutionizing medicine, will continue to present in the "Monthly Cyclopædia," the new practical facts brought out by his clinical work, and the observations of other clinicians in the field of organotherapy.

The Table of Contents of the present issue speaks for itself as to the broad field covered by the MONTHLY CYCLOPÆDIA AND MEDICAL BULLETIN. A glimpse of the June issue's contents will be found in the publishers' announcement in the advertising pages. This sufficiently exemplifies the aim of the consolidated journals, *viz.*, to furnish its readers the products of the most progressive workers of the profession.

F. A. DAVIS COMPANY.

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Cyclopædia of Current Literature

ADDISON'S DISEASE.

The most common fallacy is to mistake Addison's disease for pernicious anæmia; the peculiar lemon tint of the skin in the latter condition, however, is different from that of the characteristic case of Addison's disease; but in slight cases confusion often arises. Fortunately, modern means of examination of the blood, which in Addison's disease is but little abnormal, enable the recognition of the marked blood characteristics of pernicious anæmia. The writer, however, cautions against being content with negativing a diagnosis of pernicious anæmia because a single blood examination fails to show characteristic changes. The blood in pernicious anæmia varies from day to day and from hour to hour. Another possible source of confusion is the discoloration consequent on prolonged administration of arsenic. By inquiry of many persons of considerable experience in arsenical poisoning, the writer finds that the occurrence of pigmentation in the mouth is in favor of the case being Addison's disease. In malignant disease the wasting is apt to be much more marked, and local evidence of malignancy can usually be found. Other conditions sometimes confounded with Addison's disease, but which ought to be easily distinguishable, are the filthy, dirty patients, infested with lice, sometimes seen in hospital outpatient departments; phthisical and syphilitic pigmentation; Hanot's cirrhosis of the liver, and bronzed diabetes.

Any condition that destroys the functional activity of the medullary part of the suprarenals may cause Addison's disease, by far the most common being tuberculous degeneration. Calmette's reaction helps in this matter. The comparative frequency of malignant disease as a cause, the author considers due to the necessity of having both suprarenals affected and, perhaps, to the fact that in malignant disease death will be occasioned before the evolution of characteristic phenomena. The proportion of cases in which clinically characteristic Addison's disease has failed to show disease of the suprarenals is so small, about 12 per cent., as to be within the margin of allowable error due to erroneous diagnosis, inefficient postmortem examination, or the possibility of functional disturbance of the suprarenals. Further, other glands, e. g., the internal carotid and the coccygeal, have cells functionally resembling those of the suprarenals, and it is conceivable that very rarely disease of these glands may cause Addison's disease and lead to death before the suprarenals are affected. On the other hand, when the suprarenals have been found to be diseased and yet no Addison's disease has been present, it may be that the vicarious activity of these other glands may have formed sufficient internal secretion to prevent the patient having Addison's disease.

The treatment is entirely unsatisfactory. Adrenalin was given in the case discussed by the writer without any effect; it did not even raise the blood pressure. It has been used in so many cases without success, that a reported successful case makes one think either that the success was not permanent, or that there was a mistake in diagnosis. W. H. White (Clinical Journal, March 18, 1908.)

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[As shown by facts brought out in "Internal Secretions," the cases in which, notwithstanding the presence of the characteristic symptoms of Addison's disease, no lesions of the adrenals are found (about 12 per cent.) need not be ascribed to erroneous diagnosis. Organic lesions of the semilunar ganglia, the splanchnic nerves, the pituitary body, etc., briefly, anywhere along the adrenal nerve-paths may cause it by inhibiting the functions of the adrenals. Nor should the symptoms of Addison's disease necessarily attend organic lesions of the adrenals, since it is only when the destruction of these organs is considerably advanced that the symptoms, especially bronzing, become manifest. Not much can be expected from adrenalin; if it enters the blood at all, it merely becomes oxidized therein, producing a very ephemeral effect.—SAJOUS.]

ANEURISM OF THE AORTA, IMPORTANCE OF EARLY DETECTION OF.

With the exception of the rare cases, in which there is trouble with swallowing, the early symptoms of aneurism, manifested by pressure, are usually either pain or disturbance with the respiratory apparatus. The latter may come either from pressure on the air passages or from pressure on the recurrent laryngeal nerve. The symptoms frequently simulate those of heart disease, and their true meaning is learned partly by not finding a cardiac condition that will explain the symptoms, and partly by looking for and finding evidence of an aneurism.

The picture of aortic aneurism in its earlier stages is not uniform, but varies widely with the position and size of the aneurism. There are no pathognomonic signs. The most characteristic feature of one case may be entirely lacking in the next one. And yet a careful physical examination and a careful consideration of the physical signs and symptoms should enable the detection of the existence of an aneurism of the ascending or transverse arch at a very early stage. The x-ray examination is of use in the case of aneurisms in these two parts of the aorta as confirmatory evidence, as giving more definite information in some respects, and sometimes (when pulsation is seen) in deciding between an aneurism and a solid tumor. The x-ray may detect aneurisms of the descending arch and the descending thoracic aorta which cannot be detected by the ordinary methods of physical examination. On the other hand, a negative report of an x-ray examination is not absolutely conclusive proof against the existence of an aneurism.

The detection of an aneurism of the arch of the aorta requires no greater skill than does the recognition of incipient tuberculosis. It is, therefore, within reach of the general practitioner, if he will give this disease equal consideration with tuberculosis. When discovered early, the treatment is not the same as in the advanced stages. Moderate limitation of exertion and mental quietude are essential, but absolute rest in bed is not necessary. While the disease cannot usually be cured, life can be prolonged in comfort. The vasodilators are the most useful drugs so far as medication is demanded. H. D. Arnold (American Journal Medical Sciences, April, 1908.)

ANTRUM OF HIGHMORE, AN ORIGINAL METHOD FOR OPENING INTRANASALLY.

After sterilizing the site of the operation, the tissues are anæsthetized by the injection of a solution of cocaine and adnephrin. A perforator is inserted

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into the nose and thrust through the bony partition under the inferior turbinate. When the antrum is entered the perforation is enlarged sufficiently to allow the entrance of a curved saw, so constructed as to make an oval opening. The over-hanging mucous membrane is trimmed off and the cavity washed out and packed with gauze. The advantages of this operation are its simplicity, the speed with which it can be done; free drainage of the antrum is established; very little of the turbinate is sacrificed and then none of the anterior end. D. T. Vail (The Laryngoscope, January, 1908.)

APPENDICITIS, MASKED.

One attack of appendicitis confers no immunity against future attacks. On the contrary, a primary attack predisposes to secondary attacks. Secondary attacks are apt to be progressively serious. Therefore, as no single attack constitutes a terminal fact in medicine, opinions as to the frequency of recovery, if used as a basis for reasoning concerning either prognosis or treatment are illogical and dangerous. Cases of masked appendicitis are very frequent, the most common being the first type mentioned. These are the cases which furnish most of our mortality and cases of abscess. If these cases are treated on the theory that a much greater proportion than 70 per cent. of all cases of disease recover without operation, the accidents and mortality of the disease will be greatly increased. No one can tell anything about the real condition of the appendix in any given case of the disease without inspection and inspection means removal. This is the only safe procedure unless from other circumstances any operation is contra-indicated. A. T. Bristow (Long Island Medical Journal, April, 1908.)

ARSENIC IN TREATMENT OF SYPHILIS.

Basing his conclusion upon practical experience, the writer states that arsenic should be included among the remedies indicated in syphilis when mercury and the iodides cannot be used, either because of idiosyncrasy in the patient, or when it is necessary to suspend their use for a time, after a prolonged course of treatment. It is especially indicated in obstinate tubercular and ulcerative cutaneous manifestations, such as occur in malignant syphilis; also in cutaneous disorders which complicate syphilis. C. Rosenthal (Berliner klinische Wochenschrift, January 20, 1908).

[If used at all arsenic should be used with considerable circumspection, since it inhibits the functional activity of the adrenal system. Thyroid extract is far more efficacious in the conditions enumerated by Rosenthal when syphilis really underlies these disorders.—SAJOUS.]

ARTIFICIAL RESPIRATION BY VENTILATION OF THE TRACHEA.

The author has found that it is possible to keep alive curarized animals in whom all respiratory motion has ceased by allowing a stream of oxygen to flow into the trachea through a tube which does not fit tightly. The animals live for one and a half to two hours without any movement of the chest wall, but then regularly die. This result is due to carbon dioxid poisoning, although the blood remains bright red in color, the diffusion of gases in the bronchi not being sufficiently active to eliminate all of the carbon dioxid given off though the interchange does go on to some extent, as is shown by the fact that the animals live one and a half to two hours.

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The author has devised an apparatus by means of which this method can be practically applied, a rhythmical distention and collapse of the lung being secured by the use of the principle of the inertia of mercury. This device has been tried on a human being with good success. The patient suddenly ceased to breathe while being operated on for cerebral abscess and after three hours of ordinary artificial respiration the author's apparatus was set in operation and functionated satisfactorily during nine hours more, at the end of which time the patient died as the result of the extensive softening in the region of the brain abscess. Volhard (Berliner klinische Wochenschrift, February 3, 1908; Medical Record, February 29, 1908.)

ARTERIOSCLEROSIS IN RELATION TO MENTAL DISEASE.

While arteriosclerosis of some degree is a commonplace finding in cases of mental disorders, especially in advanced life, there are cases where the cardiovascular disorder seems to be the central element in the clinical and anatomical picture. Certain cases symptomatologically described as melancholia, hypochondria, neurasthenia, etc., may be better grouped on etiological grounds as cases of arteriosclerotic brain disorder; while the arteriosclerosis is an important factor, the factors which led to the symptomatological grouping are not to be neglected. This necessitates the analysis of the depressions in advanced life.

In certain cases of organic dementia the arteriosclerotic changes are obviously the most important element in the process and the term arteriosclerotic dementia is justifiable; but the relation of certain mental symptoms to similar ones in the presenile and senile psychoses must be kept in mind. This necessitates the analysis of the presenile and senile psychoses. The writer states that it is premature to correlate the whole symptomatology with the arteriosclerotic part of the anatomical findings.

The neurological picture in advanced cerebral arteriosclerosis is still ill-defined; and for the differential diagnosis of the various organic dementias further clinical material is required. In certain cases of epilepsy with onset in late life, the convulsions and general symptomatology are closely related to arteriosclerosis. C. Macfie Campbell (American Journal of Insanity, January, 1908.)

CEREBRAL ABSCESS OF OTITIC ORIGIN.

The author states that when we realize that fully 37 per cent. of all cases of brain abscess are a direct result of an extension of an infective process from the middle-ear and that of this number more than four-fifths are caused by middle-ear suppuration, it is not difficult to comprehend how important it is to treat this condition in order that structures adjacent to the middle-ear may not become involved.

For the relief of chronic otorrhea the attending physician too often gives instructions for the ear to be syringed out with some antiseptic solution without even examining the organ for the cause of the discharge. In the course of time drainage may be obstructed and the retained pus may involve the mastoid bone or one or more of the intracranial structures, thereby endangering the life of the patient. J. F. McKernon (The Laryngoscope, January, 1908.)

CHLOROSIS CURED BY THYROID EXTRACT.

"Case.—B. H., aged twenty-two years, female, single, occupation bookkeeper,

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suffered with symptoms of chlorosis since first menstruation. Fainting spells, heart flutterings, constipation, scanty menstruation, and constant leucorrhœa were the more prominent troubles in this case. The blood count was deficient. The treatment consisted of thyroid extract, 3 grains after meals, a daily quart clyster of normal salt solution, Blaud's pills, the practice of deep breathing, and open air life. All the symptoms yielded which had before been intractable to other modes of treatment. The remedial measures employed were suggested by a cursory reading of the second volume of Sajous's 'Internal Secretions and the Principles of Medicine.'

"If we are henceforth to ascribe many, if not all, diseased conditions to overstimulation or depression of the pituitary bodies and the consequent effect upon the internal secretions of the ductless glands, viz., the adrenals, thymus, parathyroids, thyroids, and the spleen, medicine becomes at once an exact and a simplified science. That such is the case Sajous, in his exhaustive treatise on the 'Internal Secretions,' seems very strongly to establish. He traces the nerve connection between these ductless organs and the pituitaries so clearly, and shows the control exercised by that portion of the brain over the oxidation of tissue or tissue respiration, the internal secretions acting and counteracting on the blood through the 'ferment of ferments,' that the vista at once gladdens the heart of the therapeutist and brings an air of the fact accomplished which becomes the most reassuring and convincing thing in latter day medicine.

"Following Sajous's line of medication, the two contrasted conditions of exophthalmos and myxœdema would give the key to the whole subject. Sajous says in the preface to his second volume that he does not introduce any new theory or speculation in medicine. He has simply followed such men as Brown-Séquard, Langlois, and Cibulski. He does not even introduce a new serum. He simply introduces order where there is a certain medical disarray. Mercury, iodine, quinine, strychnine, opium, and the bromides have, through his good offices, come into their rights, and rank higher than before in the list of medicaments. Thyroid extract is, perhaps, placed above them, but they are all congeners, and henceforth may become, in the hands of the profession, weapons of as much point and precision as the needle or the sterilized blade. At the same time he delivers a death blow to self medication at the hands of the laity, for when this new step in medicine is realized and grasped by the public mind, a proper dread should be felt by all for the unscientific treatment of disease. Every man should then not be his own physician any more than every man is now his own surgeon." F. K. MacMurrough. (New York Medical Journal, April 25, 1908.)

EXOPHTHALMIC GOITER, QUININE IN TREATMENT OF.

The symptoms in this affection are attributed by the writers to the active vaso-dilatation, primary or reflex, in the vessels of the head and neck. This explains, they think, the enlargement and excessive functioning of the thyroid, the cerebral symptoms, tachycardia, tremor and emaciation. Quinine is remarkable for its pronounced vaso-constricting action on the vessels of the head and neck, and thus seems ideally adapted to cure the vaso-dilatation of exophthalmic goiter. The writers have used it in treatment of twenty-one patients since

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1898, and announce that the results have been satisfactory. It was administered in doses of 15 or 22½ grains (1.-1.50) at the evening meal, divided into three capsules, taken at fifteen-minute intervals; this is kept up for twenty days each month, with suspension for ten days. They generally commence with 7½ grains (0.50) and sometimes supplement the action of the quinine with another powerful vaso-constrictor—ergot—giving from 1½ to 7½ grains (0.10 to 0.50) daily, in the morning. One patient took from 15 to 22½ grains (1.-1.50) quinine every day for six months with scarcely any intermissions and can now be regarded as clinically cured. A clinical cure was the rule in all the cases. Lancereaux and Paulesco (Bulletin de l'Académie de Médecine, Paris, February 25, 1908; Journal of the American Medical Association, April 18, 1908.)

[The vaso-dilation is not the cause of the symptoms but a result of the excessive production of thyroid secretion as shown in "Internal Secretions." The beneficial action of the quinine salt is due to its exciting action upon the vaso-motor center. By thus causing the deep and large vascular trunks to contract, the blood is driven with greater vigor into the capillaries, including those of the liver and skin. As this insures more perfect catabolism of the toxic wastes—which provoke the disease by exciting the adreno-thyroid center and through it the functional activity of the thyroid—the primary cause of the disease is removed.—SAJOUS.]

EXOPHTHALMIC GOITER, TREATMENT OF.

In an analysis of 85 cases of exophthalmic goiter personally treated by the authors, they claim that many cases are not recognized until they have become advanced. Their favorite remedy has been the more or less continuous use of the neutral hydrobromide of quinine, first proposed by Forchheimer. The acid salt does not act as well. The neutral salt is given in five-grain capsules three times a day and this is as much as can ordinarily be borne, although the authors have found patients who could take four capsules a day for a long time without the unpleasant symptoms of tinnitus. On the other hand they occasionally find a patient who cannot take more than one or two capsules a day. At the beginning of treatment patients are told that no marked effects may be seen short of a month and they must be prepared to continue it for at least two years. Great stress is laid upon this because patients become very easily discouraged if no immediate results are obtained. Usually after a week or two of treatment the pulse rate will be slowed, the thyroid diminished, and the sweating and tremor lessened. It should be continued until all the symptoms have disappeared, which may be in four months or as long as three years. The order of disappearance of the symptoms seems to be, first, the tachycardia subsides, then the sweating, then the thyroid gland diminishes, and finally the exophthalmos and tremor, the last two after only a prolonged course of treatment. In a few instances the goiter and exophthalmos persisted more or less marked after all other signs had disappeared and the patient was practically well and at work. They have never seen any bad permanent effects follow from the administration of the quinine, and the only unpleasant effect is occasional tinnitus, especially if large doses be given. It is advisable to continue the drug in small doses, one cap-

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sule three times a week during the second year, and the patients are cautioned to immediately return to former doses at the first indication of any reappearance of their old symptoms. J. M. Jackson and L. G. Mead (Boston Medical and Surgical Journal, March 12, 1908.)

FIBROMYOMATA UTERI.

A large percentage of fibromyomata uteri undergo some form of degeneration, but the majority, 64.9 per cent. of degenerations take place in women who are forty or more than forty years of age, or in other words, after the menopause. Fibromyomata uteri and visceral degenerations are found associated in a large number of cases.

Young women who are anxious for maternity and possess small tumors which are causing no symptoms, need not be subjected to operation, but should be instructed to report for examination as soon as symptoms develop. All fibromyomata uteri which produce symptoms, regardless of the age of the patient, and all fibromyomata uteri in women forty or more than forty years of age, should be removed when diagnosed, because the mortality following operation, below 5 per cent., is less than the risk of carrying the tumor, as from 12 to 14 per cent. of these patients would die if not subjected to operation.

A supravaginal hysterectomy is the operation of election because of the ease and rapidity of its execution, and last, but not least, because it is followed by the lowest mortality and should be performed in all cases where a myomectomy is not indicated and where a panhysterectomy is not demanded. Many of the associate conditions would cause death if the patients were not subjected to operation, but the mortality in these cases should not be added to the estimated mortality of fibromyomata uteri as they are independent lesions, and are in no way connected with the tumor except that the conditions coexist. A thorough pathological study should be made of all fibromyomata uteri which are removed, because of the malignant changes and the degenerations which take place in these tumors. S. E. Tracy (Surgery, Gynecology and Obstetrics, March, 1908.)

INFANT-FEEDING, LACTACID MILK IN.

Lactacid milk is obtained from clean, fresh cow's milk, fermented by the lactic bacillus, isolated by Cohendy in 1903, and which he describes as "not growing under 35° F. nor above 63° F." The degree of acidity is limited by the time allowed for the activity of the bacilli.

Buttermilk feeding and lactacid milk feeding are absolutely distinct. The former affords an uncertain and temporary expedient always, and being a spontaneously sour milk contains, besides the lactic ferments, generally yeasts which produce alcohol. In infant-feeding the frequent desideratum of high proteid percentages may be found not only possible, but also safe, with lactacid modification of milk. The digestive enzymes of natural milk are not killed as in the unnatural processes of sterilization or even in Pasteurization, but are augmented by the bacillus bulgaricus.

Lactacid milk is logically indicated in children: *a*, In difficult feeding cases; *b*, in fermentative diarrhœas; *c*, in specific enteric infections of typhoid or tuberculous bacilli. From the extremes of the scientist and the enthusiast, from Herter and from Metchnikoff come corroborative evidence that lactic acid inhibits intestinal putrefaction. Promul-

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gation of the general desirability of undiluted lactacid milk as a beverage can but lessen the ills that flesh is heir to, even if it cannot accomplish, as Metchnikoff hopes, the prolongation of man's allotted span. C. E. Carter (New York Medical Journal, April 4, 1908.)

MYXŒDEMA TRANSMITTED BY GOITROUS WET-NURSES.

The writer reports the case of a wet-nurse suffering from cystic goiter whose two nurslings developed myxœdema. The infants were cured by weaning and the use of thyroid extract. In another similar instance weaning sufficed to cure the nursling. Two women who had borne normal children before the development of goiter, gave birth, after the latter had developed, to infants which after a few months became myxœdematous. Thyroid extract reduced the maternal goiters and cured the myxœdematous children. Spolverini (Morgagni, January 4, 1908.)

[Prevailing teachings do not explain this phenomenon. Its cause is clear, however, when those embodied in "Internal Secretions" are taken into account: Both in the first and second volumes I urged that the maternal milk transferred to the nursling contained the immunizing constituents which were not normally supplied to it in adequate quantities while its adrenal system was being developed. As the thyroid secretion is one of these constituents, it is plain that a nurse whose thyroid gland is degenerated—though enlarged—as it is in cystic goiter, should not supply to her nursling enough thyroid secretion to satisfy its needs and that myxœdema should follow.—SAJOUS.]

PSORIASIS, VEGETARIAN DIET IN.

The value of a vegetarian diet in psoriasis is urged by the author, who points out the features of the disorder, indicating it to be due to underlying constitutional conditions, and refers to former articles by himself on the subject. It seems to him that the errors of nitrogenous metabolism which are evident in the urinary findings which are constant in psoriasis, must, when prolonged, have their effects on the skin, and, working on this hypothesis for many years, he has become convinced by clinical observation that psoriasis has its foundation in errors in the passage of nitrogenous elements into and out of the body. The writer does not advocate confining the treatment exclusively to a vegetable diet, though this is perhaps the most important part. Careful medical supervision in all directions is also required, and the use of drugs when called for. He has had his most striking success in the treatment of the disease since he had adopted this plan, and while it has its limitations and must be intelligently directed, he is confident that in proper cases it can control the eruption and prevent its recurrence. L. D. Bulkley (Journal of the American Medical Association, February 22, 1908).

PAIN IN PELVIC DISEASE, SIGNIFICANCE OF.

While it is true that a careful physical examination is of the first importance in the diagnosis of pelvic disorders, yet a consideration of the character and distribution of the pelvic pain will often yield interesting and suggestive information, although the limitations of such observations from the standpoint of diagnosis are evident. The good surgeon will endeavor, as far as possible, to

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ascertain the exact nature of the disease before resorting to operation, and will not rest content with merely deciding as to the advisability or inadvisability of operation.

The pain of pelvic visceral disease is in a general way governed by the same laws which apply to the causation of pain in the other abdominal viscera. One of the dangers of neglect of pelvic disease, is the possibility of the development of a condition of neurasthenia, with a diffusion of pain to other parts of the body, and the appearance of other more or less characteristic symptoms of this condition. One of the reasons for the continuance of unpleasant symptoms after operative treatment of pelvic lesions, is the persistence of the neurasthenia which is frequently a complicating factor in such cases.

Hysteria, as it manifests itself by pelvic symptoms, presents the same characteristics which distinguish it as it appears in other parts of the body. The removal of normal ovaries or conditions of pelvic pain is founded upon an erroneous and obsolete conception of the mechanism of such pain, and modern surgery has condemned such a procedure as unjustifiable from a theoretical point of view, and useless from the standpoint of clinical experience.

The so-called fibro-cystic ovaries are frequently found in women who enjoy perfect health, and hence great caution is necessary in attributing pelvic pain to such organs. If operative treatment be resorted to at all, it should be conservative rather than radical.

The gynecologist must learn to look upon pain as the resultant of two factors, the lesion and the patient, and in order to arrive at an intelligent appreciation of the true significance of pelvic pain, he must study both these factors with equal fidelity. Emil Novak (American Journal of Obstetrics, April, 1908.)

RHEUMATISM, CHRONIC: THYROID TREATMENT.

The authors report 39 cases of chronic rheumatism observed during the last three years treated with desiccated and pulverized sheep thyroids; from one to three doses a day of 10 centigrams each, equivalent to 50 centigrams of fresh glands, were given. The patients' ages ranged from 12 to 75 years, and in 5 cases the hydrarthrosis resulting from the rheumatism had confined the patients to bed for years. In 9 other cases the persistence of the pains, recurrence of subacute attacks and deformities were very distressing. In 19 grave or severe cases, 2 of the patients can now be regarded as clinically cured under the treatment, and in 14 cases there was great improvement either in the pain, the functional impotence or the deformity in the joints or elsewhere. In 20 moderate or mild cases of chronic rheumatism, 18 of the patients were immeasurably improved or cured. The results were better the more recent and milder the cases. The benefit has persisted in the various cases. Léopold-Lévi and H. de Rothschild (Le Bulletin Médical, February 12, 1908.)

[An analysis of the mode of action of thyroid preparations in chronic rheumatism was published in our last number.—EDITORS.]

STRICTURE OF THE EUSTACHIAN TUBE.

Examination of a large amount of anatomical material shows that in almost all adult subjects the fossæ of Rosenmüller is more or less obstructed. This obstruction is due sometimes to lymphoid and at other times to fibrous tissue. The younger subjects have the

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greatest amount of the lymphoid tissue, the elders have less, and the aged have none at all, showing that the lymphoid tissue atrophies and leaves only fibrous tissue adhesions. The lymphoid obstructions in the fossæ originate from hypertrophy of the lymphoid lining, which either obliterated the fossæ to a greater or lesser degree or bridge them over. The obliteration, whether partial or total, is caused either by filling the fossæ from the fundus or by adhesions between the anterior and posterior surfaces across an abnormally narrow fossa. The mass of lymphoid tissue in the fossa tends to imperfect patency of the Eustachian tube, thus preventing normal drainage and ventilation of the middle-ear, and with the adhesions in the fossæ interferes with the physiological action of the Eustachian tube through imperfect movements of the tubal cartilage, which results in stricture of the Eustachian tube. W. Sohier Bryant (Medical Record, February 8, 1908).

TETANY, RELATION OF THE PARATHYROIDS TO CALCIUM METABOLISM AND THE NATURE OF.

It has been found by the authors that all the violent symptoms produced by parathyroidectomy, muscular twitching, fibrillary tremors, increased rapidity of the heart, etc., may be almost instantly cured by intravenous injection of a solution of a calcium salt. The acetate or lactate in a 5 per cent. solution was usually employed. Subcutaneous injection or the introduction by mouth seemed as effective, but acted more slowly. The tetany may reappear in twenty-four hours, but disappears immediately upon the renewed administration of calcium. Magnesium salts seem to have a somewhat similar effect but the results are obscured by the toxic action of the salt. Potassium salts intensify the symptoms. Incomplete studies of the excreta and blood of the parathyroidectomized animals tend to show an increased output of calcium in the excreta and a diminished calcium content in the blood. The writers construct the working hypothesis that the parathyroids control the calcium metabolism of the body. W. G. MacCallum and C. Voegtlin (Bulletin of the Johns Hopkins Hospital, March, 1908.)

[Evidence submitted in "Internal Secretions" led me to conclude that the parathyroids were united functionally with the thyroid, in the sense that their products combined after being secreted. Now Senator, and von Moraczewski, Parhon and Papinian, and Léopold-Lévi and H. de Rothschild have laid stress on the important rôle of the thyroid in the assimilation of calcium. The opinion of MacCallum and Voegtlin that the parathyroids control calcium metabolism thus coincides with the opinion of the preceding authors, when my own views are taken into account.—SAJOUS.]

WARTS AND MOLES, MALIGNANCY OF.

The danger of the malignant degeneration of warts and moles is hardly sufficiently appreciated by either the medical profession or the public in the opinion of the writer, who reports an impressive series of cases observed in the St. Louis Skin and Cancer Hospital. It is true that a wart or mole may never become malignant, but a study of the literature, together with his own personal observation, convinces the author of the reality of the danger. In some cases a more or less constant irritation seems to be the exciting factor, and in others a slight injury, such as an insect bite or a cut received in shaving seems to start the growth into malignancy.

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Most of the writer's cases had their origin in warts. One difficulty experienced is the reluctance of patients to permit operation early enough to check the morbid process. The writer agrees with Keen who contends that the moment warts and moles begin to increase in size they are almost always already malignant growths and should be treated as such. He protests against the practice of cauterizing warts on the face; they should be excised. E. A. Babler (Journal of the American Medical Association, April 18, 1908.)

Book Reviews

HUMAN ANATOMY. Including Structure and Development and Practical Considerations. Edited by George A. Piersol, Professor of Anatomy, Medical School of the University of Pennsylvania. Fully Illustrated, 2088 Pages. Philadelphia and London: J. B. Lippincott Company.

Piersol's work will unquestionably win a well-merited place among the best Anatomies available. Not only is it very complete, but each department has been prepared with so much care and they are all so perfectly balanced in every particular, that they appear as if written by the same author. The section on the skeleton including the joints—which are treated together, an excellent innovation; that on the gastro-pulmonary system and the accessory organs of nutrition were written by Professor Thomas Dwight, of Harvard; that on the cerebro-spinal and sympathetic systems by Professor C. A. Hamann, of West Reserve; that on the muscular, blood and lymph systems by Professor McMurrich, of the University of Michigan; that on histology, embryology, the uro-genital system and other subjects by the editor himself. A valuable feature of the work is the surgical application of anatomy, a subject ably treated by Professor J. William White of the University of Pennsylvania. Of the 1734 admirable illustrations the whole work contains, no less than 1522 are original and prepared largely from dissections by Professor John C. Heisler, of the Medico-Chirurgical College. On the whole, it is a work which reflects great credit upon its authors and publishers.—C. E. DE M. S.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. The New Eighth Revised Edition. Octavo of 1317 Pages, Fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $5.50 net; Half-morocco, $7.00 net.

The many editions of Professor Anders's text-book and its true worth place it, as it were, *hors concours*, as the French put it when they refer to a production of any kind which, owing to its superior merits, stands above even the highest award. The present edition contains many new features, calculated to bring it "into consonance with our most recent positive knowledge of internal medicine." It stands above other text-books in a particular of great value to the general practitioner, viz., the great number of practical suggestions it contains. We have no hesitation in stating that we regard it as the most satisfactory text-book available. —C. E. DE M. S.

CANCER AND TUBERCULOSIS. Based upon Physiologic Chemical Principles Being a Thesis in Two Parts Illustrated with Diagrams and Chart. By Henry D. McCulloch, M.B., Glasg., Fellow of the Society of Tropical Medicine and Hygiene, London: Published by Mate & Sons, Bournemouth, England, 1907.

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In this excellent monograph the author submits a new hypothesis upon the pathogenesis of cancer. Reduced to their simplest expression, his conclusions are as follows: Cancer is due to some external parasite which affects weakened individuals and is capable of evoking a defensive reaction in the body similar to that known to antagonize other diseases. This defensive reaction, however, is as a rule inefficient to overcome the morbid process. He holds that a "vaccine" to cancer is formed in the lymphatic glands themselves, and that there is reason to hope that by proper culture, a vaccine vicariously prepared in a living animal will be possible. Indeed students of this fell disease should attach considerable importance to its relations with the problem of immunity. The reviewer is all the more inclined to do so in that he was the first (January, 1903) to ascribe cancer to inefficiency of the defensive resources of the organism. We hope that Dr. McCulloch's able and suggestive contribution will meet in America the appreciation it truly merits.—C. E. DE M. S.

DISEASES OF THE BREAST WITH SPECIAL REFERENCE TO CANCER. By William L. Rodman, M.D., LL.D., Professor of Surgery in the Medico-Chirurgical College of Philadelphia; Professor of Surgery in the Woman's Medical College of Pennsylvania; Surgeon to the Medico-Chirurgical Hospital, the Woman's College Hospital, the Philadelphia General Hospital, the Jewish Hospital and to the Presbyterian Hospital; Fellow of the American Surgical Association; Membre de la Societe Internationale de Chirurgie, etc. With 69 Plates of which 12 are Printed in Colors and 42 Other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1908.

Professor Rodman may be said to have perpetuated the work and skill of Samuel W. Gross, his master, whose labors have initiated what might be termed the modern surgical era of cancer—an era which enables the author to urge that "surgery should cure one-half of all cases provided that they can be subjected to the complete operation early in the course of the disease." Indeed, he publishes a record of 66 2/3 per cent. of cases operated by himself between 1898 and 1904 which "remain free from any sign of recurrence whatsoever, either regional or internal" to sustain his assertion. The work is not limited to carcinoma of the breast, however, but treats, besides, the subjects of anatomy and physiology, inflammatory diseases, tuberculosis, syphilis, actinomycosis, cysts, diffuse hypertrophy, keloid, tumors in general, fibro-epithelial tumors, lipoma, enchondroma, myxoma, angioma, endothelioma, sarcoma, Paget's disease of the nipple, all in a most satisfactory manner. A prominent feature of the work is its illustrations, 111 in number, including 69 plates, 12 of which are in colors. On the whole, the reviewer deems it a duty to recommend Professor Rodman's book because it is the best and most practical work of its kind in the English language.—C. E. DE M. S.

OUTLINES OF PSYCHIATRY. By William A. White, President of the Government Hospital for the Insane, Washington, D. C. Published by the Journal of Nervous and Mental Disease Publishing Company, No. 64 West Fifty-sixth Street, New York. Price, $2.00.

This admirable summary of the whole field of psychiatry is well qualified to fulfill the needs of the average practitioner of medicine, who is peculiarly lacking in primary instruction on mental disease and yet is so sorely in need of this eminently valuable knowledge. The book constitutes the first of a series that will be published from time to time by William A. White and Smith Ely Jelliffe. The rather fortuitous movement, recognizable at present, to discuss the subject of psychotherapy serves admirably to call the attention of physicians to the fact that they are peculiarly ignorant in the science of the mind, which is, after all, of so much significance in dealing with all phases of bodily action, whether normal or disturbed. The general impression is, not only among physicians but the reading public also, that psychiatry consists of a mass of ultra scientific researches inclining toward mysticism and standing far apart from the daily problems of life. It is among the purposes of this book to make clear that this view is erroneous.

There are a number of valuable text-books on psychiatry available which give the necessary information and recommendations, but the medical practitioner too often regards

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these as so specialized as to be scarcely adapted to his needs. We had the privilege of reviewing quite recently the excellent book by Stewart Paton, of Johns Hopkins, which is not over-large and yet exceedingly clear and helpful. The book before us is much smaller and will, therefore, be more widely welcomed by those whose reading time is limited; it supplies, however, ample suggestiveness and an orderly arrangement of facts and opinions, with practical measures for dealing with the problems of psychosis, of which no one can afford to be ignorant who is a conscientious conservator of human health. Indeed, if one is content to be dependent upon those fragmentary presentations of diseases of the mind found in the standard textbooks of medicine he is doomed to much disappointment. These are written from the standpoint, doubtless, of some experience, but not of that specialized familiarity which is needed.

The make-up of the book is excellent and the copy before us is bound in strong paper and will serve an important purpose and deserves appreciation. The second book of this series as announced, is to be "Studies in Paranoia," by Drs. Gurlich and Friedman. The third is "Ibsen the Apostle of the Psychopath," by Smith Ely Jelliffe.—J. M. T.

THE STANDARD FAMILY PHYSICIAN. A Practical International Encyclopœdia of Medicine and Hygiene Especially Prepared for the Household. By Professor Carl Reissig, M.D., of Hamburg, Germany and Smith Ely Jelliffe, A.M., M.D., Ph. D., Professor of Pharmacognosy, Columbia University, etc. With the Assistance of Many American and German Specialists in the Treatment of Diseases and Experts in Medicine and Surgery. In Two Volumes. New York and London: Funk & Wagnalls Company, 1907. Pp. 1061.

The two large volumes before us are to be welcomed and recommended for purchase by all families who are sincerely desirous of having an encyclopedia of practical medical facts always within reach. No similar work of anything like the scope and scientific authority of this one has been offered, so far as we know. It is more than desirable that intelligent people shall be instructed in the fundamental facts whereby they can learn to live wholesomely, avoid disease and meet the ordinary exigencies which must arise in most households. At first sight it might be claimed that it is undesirable to instruct the people generally in matters medical, or at least it might be asserted that partial education is a dangerous thing; or from a selfish point of view on the physician's part, the argument might be sustained that it is the province of the physician alone to offer such information and instruction. The difficulty is that physicians don't do this as much as they have opportunity. It is true, too, that families do not encourage visits of inspection and observation whereby the physician could enormously conserve health and supply suggestions to prevent small ailments growing into large, not only from the physical side but, above all, the mental. It is an undeniable fact that if physicians were to meet exigencies in households whose members have been instructed by consulting some such work as the one under review, much of the despair and general dissatisfaction which he is compelled to feel in being obliged to deal with effects of blundering attempts at medication would at least be eliminated.

The foreign editorial staff is one of considerable size, numbering thirty-two members, and is composed of authoritative individuals. Among these are the names of some of the first clinicians in Europe. The American staff consists of our foremost teachers. The name of the American editor, Dr. Smith Ely Jelliffe, gives a tone to the work which is the equivalent of a strong recommendation. Such a book as this, filled with accurate information, practical recommendations and simplified explanations on many points most vaguely understood, will be of the utmost utility in remote localities, for big industrial plants, and in a thousand ways will prove an admirable adjuvant to the clinician.

The work consists of two large volumes, the main body of which is alphabetically arranged. It is excellently conceived, well balanced and contains, as nearly as can be determined, precisely the right subjects, treated at just about the proper length and completeness and upon an eminently practical basis. The book indeed can be unhesitatingly recommended for general use.—J. M. T.

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THE MEDICAL BULLETIN

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Original Articles

THERAPEUTICS IN THE LIGHT OF ECOLOGY.[1]

By JOHN V. SHOEMAKER, M.D., LL.D.,

PHILADELPHIA.

Professor of Materia Medica, Therapeutics, Clinical Medicine, and Diseases of the Skin, in the Medico-Chirurgical College and Hospital of Philadelphia.

The relation between therapeutics and other departments of medicine has been so frequently discussed that its pre-eminent position in the group of biologic sciences is now unquestioned. As somewhat axiomatically stated by J. Milner Fothergill, "All other medical studies are the foundation, therapeutics is the superstructure." The healing art has always followed the Lucretian principle "of taking its good wherever it finds it," and thus it constantly and consistently lays the entire stock of human knowledge under tribute. Since the science of therapeutics always reflects the advances in other departments of knowledge, it must be a progressive science. It cannot, in the very nature of things, become stationary or stereotyped. Does the science of optics present us with new instruments of precision, such as the spectroscope and the compound microscope, or reflecting telescope, these are, at once, appropriated, and ingeniously adapted to medical use, both for the purposes of diagnosis and the increased facilities they afford for local treatment. The general recognition of the pathological effects of eye-strain, at the present day, only brings to our attention the debt we owe to optics; certainly the prescribing of proper spectacles is now universally acknowledged to be an important branch of therapeutics. Applied science which has furnished us with the arc light, has unexpectedly also supplied means, hitherto unattainable, whereby diseased conditions may be overcome. The great work accomplished by Finsen by this means, especially in dermatology, has received world-wide recognition. The many other recent applications of electricity, in the high frequency current, the violet light, and the X-Rays—now familiar to all of us as household words—also serve as illustrations of the contributions of modern physics to the science and art of therapeutics.

[1] The President's Address delivered before the American Therapeutic Society at the Annual Meeting held in Philadelphia, May 7, 8, and 9th, 1908.

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Without pursuing this thought further, I merely suggest the mutual dependence of therapeutics and other departments of human knowledge, in order to show that such a close relation has always existed in the past and may be expected to continue in the future. It is evident, therefore, that the science and art of therapeutics are conditioned by the grade of intelligence and by the general scientific attainment existing among the people. Therapeutics may in a manner be said to roughly represent the scientific development of the human race, at each period of the history of civilization. If we consider the actual condition of therapeutics, at the present time, in different parts of the world, we find, as the rule, tribes of low civilization presenting a correspondingly low development of medical art. It is but a truism to say that it is only the highest cultured races, which possess truly scientific methods of treating disease, and which most actively contribute to the further progress of the art and science of medicine.

Therapeutics is the oldest of the arts as it is the youngest of the sciences. When the healing virtues of certain springs were accidently discovered, the ancient Greeks erected in the vicinity temples to Esculapius. At these primitive health resorts, the medical priests made records of the successful methods of using the waters in different diseases. From this first medical literature, it is said that Hippocrates gathered the material for his celebrated aphorisms, and treatises on airs, waters and places. It has been pointed out that the ancient philosophers principally cultivated the powers of the imagination, but neglected experimentation. It was not until comparatively recent times, when the inductive philosophy of Leonardo Da Vinci and Francis Lord Bacon began to prevail in Europe that the value of carefully planned experiments was introduced into therapeutics. The systematic interrogation of nature by experiment was pursued first of all by the alchemists. Although their minds were preoccupied with the idea of the philosopher's stone and the search for the sympathetic powder for transmuting metals, nevertheless they did advance the knowledge of chemistry and of therapeutics to a decided extent and kept the torch of science burning, although with a flickering light, for centuries. The first system of philosophy which deliberately undertook experimentation with the view of increasing the comforts and mitigating the sufferings of mankind was the inductive philosophy of Bacon and Da Vinci. From that date to the present, natural science has developed at a constantly increasing pace, and therapeutics has consistently kept pace with it in its upward course. Each century has contributed its quota to our knowledge of the fundamental laws of the universe, and the century which has recently closed has been more prolific than all its predecessors.

For obvious reasons, therapeutics appears to be especially dependent upon chemistry. We know, however, that the real science of chemistry did not originate until about a century ago. The key which opened the treasure house was exact measurement. As Van T'Hoff has pointed out, each new instrument for measuring a given phenomenon of nature has lead immediately to a greatly accelerated development in that particular field. Socrates, as reported by Plato, very justly observed, "When measuring and weighing are taken away

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from an art, how little of that art is left!" In a recent address on "The New Outlook in Chemistry" (Science, 1907, page 297), Professor Theodore Richards uses this quotation and adds to it the significant corollary, that "the more efficiently weighing and measuring are used in any art, the more valuable that art becomes." This had also been observed by Kant, who remarked that "A subject becomes truly scientific only when its facts are susceptible of mathematical treatment." It is only in comparatively recent times, as I have just pointed out, that the other sciences, and especially chemistry, have contributed the necessary data and the technical means for the mathematical study of disease processes and of the action of remedies. I need not stop to catalogue the numerous instruments of precision introduced into clinical medicine of recent years to prove the scientific character of modern therapeutics.

As the animal cell is essentially chemical in its functions it is evident that many of the conditions which we regard as diseases must be attended by definite, if not always demonstrable, chemical disturbances. The due recognition of the chemical nature of such disturbances would naturally suggest the clue to the appropriate treatment. Therapeutics therefore, in this light, becomes essentially a chemical problem. In fact, this view has been summarized by Hippocrates in the familiar phrase, "Medicine consists in addition and subtraction; the addition of those things (elements) which are deficient, and the subtraction of those which are in excess. He who follows this practice most is the best physician, and he who departs from it farthest is the least acquainted with the art."

As an evidence of modern achievement in this direction I note with pleasure a recent text-book by H. Gideon Wells, of Chicago, devoted to "Chemical Pathology." I am also glad to state that an earlier work on "Medical Chemistry," written by a Philadelphian, my friend Professor William H. Greene, has proved to be very acceptable to students and has been adopted as a text-book in many universities and colleges.

Having rapidly reviewed the claims of modern therapeutics to be regarded as a science, I will now briefly consider its relation to another comparatively recent study, that of "Ecology." This department of science investigates man in regard to the effects of his environment. This includes all external conditions, whether meteorological, economical, social, or individual. For a long time it has been familiar knowledge to the profession that climate, altitude, temperature, occupation, social requirements, bodily habits, clothing and food, each exert an influence upon health and disease. Therapeutics, therefore, necessarily takes cognizance of such agencies for the purpose of overcoming or minimizing the effects of such as are injurious, and of utilizing those which are advantageous, to the individual case. This has found expression in the popular observation that the conditions which surround the patient when he falls sick are not as a rule those which, when he is sick, are most favorable to his recovery. Success in therapeutics materially depends upon the recognition of the effects of the external conditions upon the individual, especially taking into account what has been termed his "Personal Equation." May I illustrate this with a few examples? A young adult presents himself suffering with in-

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cipient phthisis. In every respect he appears to be identical with the other physiological bankrupts in a certain group of consumptives. But, upon inquiry, it is found that his parents emigrated from the south of Europe where for generations his predecessors had been reared in a mild, sunny climate. In such a case, scientific therapeutics takes a hint from ecology and advises the patient that his recovery will be facilitated by removal to a climate to which his organism had been adjusted by heredity. Another illustration is afforded by a white man living in the tropics, who becomes profoundly anemic and neurasthenic. This is explained by Major Charles E. Woodruff, Surgeon in the U. S. Army, in his interesting work entitled "The Effects of Tropical Life on White Races." He shows conclusively that only the dark skinned races can thrive in the tropics. The white races, lacking the protecting agency of the pigment in the deeper layer of the cuticle, suffer from the chemical or actinic action of excessive light which exerts a deleterious influence, especially upon the neurons. It is evident that cases of the character just referred to, of so-called tropical neurasthenia, have a much better chance of recovery, probably their only chance, in prompt removal to a more temperate climate. Another illustration of the unfavorable action of environment but in the opposite direction, is observed among the residents in the deep, sunless valleys of Switzerland. Here, goitre develops and cretins are found. Therapeutics, in such cases, requires their removal from these unfavorable surroundings as the first step towards recovery. Yet another illustration is supplied by certain individuals who suffer with asthma when residing at the sea level; but find relief from it after changing to a more suitable climate, perhaps at a moderate elevation, inland. The victims of hay fever likewise periodically suffer, except when they forestall the attack of vasomotor coryza by going to some health resort where exemption is obtained. Similarly, therapeutics often requires the removal of patients from the torrid climate of summer in our large cities. It is a trite observation that in young infants particularly, the removal of the patient from the hot city to the open country or seashore is the most effective method of life-saving. The practice of dwellers in the large American cities of spending most of the summer out of town, therefore, appears to be fully justified by the therapeutic standpoint. I am informed by physicians of Colorado, who reside, say at the elevation of Denver (5,000 feet or more), that normal health can only be maintained by occasional visits to a lower level. Neglect of this precaution is a cause of disease, the malady frequently taking the form of brain lesion. On the other hand, many asthmatics and consumptives, dwelling upon the Appalachian plain, by a timely removal to the mountain climate of Colorado, New Mexico and California, are able to live for many years in comfort and freedom from all symptoms of disease. As a final illustration, I might briefly refer to the special advantages in the treatment of many diseases which are offered by a residence at well known health resorts, especially where there are mineral springs. I will not dilate upon this theme at present, as I have recently had occasion to give my views at some length upon this subject before the Department of Agriculture, at Washington.

I have recalled these familiar illustrations to your attention merely to

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demonstrate the very intimate relation of ecology to therapeutics, which I believe has, previous to this time, never been thus formally presented to a medical audience.

There is one aspect of the subject, however, to which I especially wish to invite your attention for a few minutes. Thus far I have confined my consideration to the external, material agents administered to the sick, or to the physical conditions surrounding the patient. But is there not a moral and emotional environment, as well as a physical one, which must be taken into account? Every person, not an infant or an imbecile, is conscious of the outside world and constantly receives impressions, both pleasant and unpleasant, from his surroundings. When the unpleasant perceptions predominate and become persistent, they unquestionably tend to cause ill health. For instance, domestic trouble and unhappiness and the resulting discontent and dissatisfaction, constitute a frequent underlying cause of hysteria, headache, nervousness, melancholia and impaired nutrition. An important feature of the celebrated rest cure of our fellow townsman, Dr. S. Weir Mitchell, is isolation of the patient for a somewhat lengthy period of several months, the therapeutic effect being dependent to a great degree on the change from the moral and physical environment of sympathizing, often hysterical, relatives, to the quiet room and the society of the trained nurse. The contrast is certainly at times very great, and has in itself a marked beneficial influence. Many cases of melancholia and of incipient insanity, in this way, by this change from the ordinary home surroundings to a well ordered sanitarium or hospital, may be restored to their normal mental condition. The practicing physician is frequently confronted by the problem of what to do with a mind diseased, and it often happens that the solution is to be found in a change of surroundings of mind and body. If a cheerful face does good like medicine, there is no question whatever but that the pleasant surroundings of a well managed hospital with its trained nurses constitute a true therapeutic measure.

Therapeutics has been divided into somatic and psychic therapeutics, but the division is arbitrary and artificial. In point of fact, as we well know, bodily and mental symptoms are inseparable. Instead of having a healthy mind in a healthy body, we are confronted with an individual possessing a sick mind with a sick body. These two factors, the physical and the psychic, frequently vary at different times in the same individual and in diseases with the same name.

The unknown is always fear-inspiring, according to an old maxim. Now, it is a well known fact that many otherwise intelligent persons are childishly ignorant of disease, and indeed of almost everything else that they should know about their own bodies. Consequently when they become ill, they not only suffer with the bodily disease, but also from the apprehension of being sick. Pathophobia, or a morbid fear of illness, is a subject that hitherto has not received the serious consideration which it deserves. In the minds of some, however, this form of morbid nervousness at the present day is in danger of receiving a totally disproportionate degree of attention. I refer in illustration to the recent developments in Boston, which have also extended to other

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large cities. A distinguished clergyman, actuated by philanthropic motives, has opened public clinics, devoted especially to the cultivation of the will power, and to minimizing the depressing influence of morbid fear. The newspapers have taken this up with avidity, denominating it a new cult, and referring to the Rev. Doctor Elwood Worcester as the promulgator of a new system of healing. On reflection, however, we may discern the philosophy of this movement, which essentially consists in the recognition of the physical and moral environment of the patient, which, in the individual case, as I have just shown, may be inharmonious, and a constant source of discord, discontent and disease. The success of the therapeutic method in any given case of this character depends upon determining the discordant factor and overcoming it, or ignoring it, as much as possible. In this way it may be possible to secure a degree of harmony between the individual and the moral and economic conditions which he must face. The recent therapeutic movement has not escaped criticism. In the eyes of a well known neurologist of this city (Dr. F. X. Dercum), it is merely a revival of mystic medicine, which, as everyone knows, held a prominent place in ancient Egypt and in Greece, and in fact is as old as the human race. It is the method of healing which is found to-day among the Obi men of Africa, and among our American Indians. Traces of it may even be occasionally recognized among peoples of the highest civilization who consume annually enormous quantities of patent medicine, or purchase amulets which they believe possess mysterious power of overcoming disease. It has been asserted that the new movement is dangerous: (1) because it is allied to hypnotism, (2) because it develops hysteria, and (3) because it induces morbid introspection and depresses the mental powers. These are serious objections and demand respectful consideration. Is there indeed a danger of a wave of epidemic hysteria, or emotional insanity, sweeping over the country, like those remarkable occurrences which distinguished the Middle Ages? It is true that we are an excitable people, and not free from hysteria, as has been shown in times of epidemics and by our attitude towards some forms of contagious disease; but in no other country in the world is the average degree of intelligence so great as in our own, nor anywhere public opinion is so safe and sane, as the general rule. The dangers of cultivating hypnotism and stimulating morbid introspection may be real and imminent. The timely warning, however, will do much towards minimizing or eliminating them in future. This is more likely to happen because the author of the movement appears from the beginning to have secured both the guidance, and also the active co-operation of physicians of high standing. If the method merely inspires the sick with patience, or encourages a spirit of stoicism, which forbids them to complain, it will be of great value, even if it does no more. It is, I understand, required that, in all real bodily ailments, the patient shall be directed to consult a scientific physician. In cases where morbid apprehension alone is the cause of disease and suffering, the method under consideration may be successful both in allaying fear and in inspiring the patient with renewed courage and hope, with which to face the hard problems of daily existence. An emotional nature, which in its undisciplined condition, would be a prey to hysteria, may thus be trained

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and educated to self control and secure a personal adjustment to life's burdens. Religious motives and sentiments have always been recognized to be powerful aids in producing this desirable consummation. Their assistance, therefore, should not be underestimated nor rejected by the thoughtful therapeutist. The Emmanuel experiment, as it has been called, taking the name from Dr. Worcester's church in Boston, appears therefore to be based on a scientific foundation, and if it can be continued in the same conservative and judicious manner in which it has been inaugurated, it may be of great service to a very large, more or less neurotic, class of patients. It should, however, be carefully safeguarded against the invasion of the hypnotist and charlatan. In so far as the new movement has shown an unexpected appreciation of scientific medicine and modern therapeutics, it appears to me to be a gratifying indication of a better understanding of the physician's problem, and of the value of his skill, by leading minds of a sister profession. It may lead, on the other hand, to a fuller appreciation by physicians of the therapeutic aid to be derived by the sick from the teachings of a high philosophy as expressed in certain religious formulæ and doctrines. Within the last three months there has been opened in this city a public dispensary or clinic for mental disorder, which promises to be of great usefulness. It was instituted chiefly through the instrumentality of Dr. S. Weir Mitchell, in connection with the Orthopedic Hospital and Infirmary for Nervous Diseases. This service has been under the immediate charge of Dr. Charles W. Burr and his assistants. which, in many cases, may be said to approximate or be within the borderland of insanity.

Experience at this clinic has already developed the fact that many of these nervous disorders are due to overwork and an unfavorable individual environment. Women, weakened by frequent child-bearing, and who break down under the drudgery and cares of housekeeping, and who may also be compelled to help support the family by manual labor, are frequent applicants for relief. Men struggling against disappointment and out of work, or working irregularly, become despondent and discouraged, and seek expert advice. In most of these cases, there is a crying need for some organization that shall have power to change their environment, and place them under more favorable and less nervous conditions. This has been done in England with remarkable success by that great philanthropic and religious organization known as the "Salvation Army," which has established farms or colonies in the country where the derelicts of civilization may return to the simple life "far from the maddening crowd."

In England it has been recently proposed to establish hospitals for mental diseases, and Dr. Henry Maudsley has generously offered to the London Council the sum of $150,000 for building a hospital of this character. The main object of the proposed institution would be the early treatment of patients with acute mental disorder, with a view, so far as possible, to prevent the necessity of committing them to insane asylums.

In such institutions, patients can be temporarily removed from their unfavorable environment, and thus afforded a chance to get refreshed and re-

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stored in body and in mind. Permanent recovery, however, could not be expected, unless they were instructed and aided to make the ordinary conditions of their lives less onerous. Lessons of thrift, household economy, avoidance of wasteful habits, the proper care of children, and inexpensive amusements, should be taught, and if possible, they should be directed and aided to obtain more renumerative forms of employment.

In a recent work, Nietsche has declared that "The ever dominant and only inherent impulse in all living beings, including man, is the will to remain alive; the will that is to attain power over those forces which make life difficult or impossible." Therapeutics, therefore, as an expression of man's desire to enjoy health and prolong life, is innate and primary. To a certain degree, at every stage of man's development, it has indicated the measure of success achieved, and the extent of progress made, in his struggle to attain mastery over the adverse elements and forces which tend to destroy him. Although we may not accept fully the view that the same writer held with regard to ethics: "That all schemes of morality are nothing more than efforts to put into permanent codes the expedients found useful by some given race in the course of its successful endeavors to remain alive," yet this illustrates very clearly the close connection or family relationship existing between ethical teaching and therapeutics.

My final illustration of the relation between therapeutics and ecology is afforded by the movement just referred to, which shows that even the religious and moral teachings which surround a man's life may affect his health, and may be wisely and prudently directed towards overcoming disease, and especially morbid fear. This is not a new observation, and in its abstract form it needs only to be stated to be universally accepted. It was not my intention to discuss it exhaustively but merely to refer to it as an illustration. In its present concrete manifestation, I may remark, however, I can see a promise of much good, and also a potentiality of some harm. It is certainly an impressive object-lesson of the influence of environment upon pathologic conditions coming within the domain of psycho-therapy.

Within a comparatively short time many new discoveries have been made in the applied sciences which have greatly expanded our therapeutics. With regard to our resources we have a veritable embarrassment of riches. Temporary confusion, inconvenient as it is, seems at times to be necessary to progress. I feel assured, however, taking everything into consideration, that the prospect for scientific therapeutics was never more encouraging than it is at present.

In the last professional literary work of the elder Austin Flint—I refer to his posthumous address on "The Medicine of the Future"—is to be found the following paragraph (p. 34): "The progress of medicine induces, slowly but surely, changes in popular ideas. The physician of the future will, perhaps, not be better appreciated, but there will be a truer estimate of medical knowledge and of the medical profession. It is a pleasant thought that hereafter the practice of medicine may not be so closely woven as hitherto, in the popular mind, with the use of drugs. The time may come when the visits of the physician will not as a matter of course, involve the co-operation of the pharmacist; when medical prescriptions will be divested of mystery and have no force in the

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way of fortifying the confidence of the patient. The medical profession will have reached a high ideal position, when the physician, guided by his knowledge of diagnosis, the natural history of diseases, and existing therapeutical resources, may with neither self-distrust nor the distrust of others, treat an acute disease by hygienic measures without potent medication." Referring to the treatment of consumption, he said: "With the now prevailing view, it seems a surprising statement that phthisis pulmonalis may be self limited, and end in recovery purely from an intrinsic tendency; yet, I venture the assertion that the correctness of the statement has been substantiated, and that before many years elapse it will be generally acknowledged to be a clinical fact. How important is this fact in judging of the agency of medicinal, climatic, and hygienic measures in the treatment of this disease!" Gentlemen, this prophecy has been fulfilled. It is now universally admitted that pulmonary consumption is successfully treated by pure cold air and proper diet, with the minimum quantity of medicine. The chief physician of the State Sanitarium for Consumptives, at White Haven, our fellow member, Dr. L. H. Flick, when asked "What treatment do you give to the patients?" replied, "We give them plenty of eggs, milk, and fresh air, and almost no medicine."

As my time has about expired, I find that I must dismiss with the briefest mention a recent and very important development of therapeutics in connection with State medicine. I refer especially to the action of the authorities through their boards of health and sanitary officials, in various parts of the world, in deliberately setting to work to change the environment of the individual. This with a view both of placing the sick under improved conditions and of limiting the spread of contagious disease. The alteration of the environment by the removal of mosquitoes, flies, fleas, rats and other animate bearers of contagion has demonstrably reduced the number of cases of yellow fever, malaria, typhoid fever, and plague. It also has apparently solved the problem of how to deal with the African sleeping sickness as it has, beyond all question, that of the Porto Rican scourge, uncinariasis. Would time permit, I would like to state some of the really wonderful results which have been already obtained in the management of the great white plague, pulmonary consumption, through the aid of the public authorities. Not to mention what has been done in Massachusetts, New York, Illinois, and other sister commonwealths, I will merely point to the results in Pennsylvania obtained under the direction of our energetic and able Commissioner of Public Health, Dr. Samuel G. Dixon. In the two State sanatoria for consumptives, situated at White Haven and Mont Alto, hundreds of this unfortunate class have been treated with unprecedented success. All are improved and many are completely restored to health and usefulness. Public dispensaries in all parts of this State have been opened to instruct these patients in the sanitary importance of the environment, and inducing them to change it by sleeping in the open air and observing other hygienic measures. The effect of this campaign by the government under medical direction is already seen in the notable reduction of the death-rate from consumption and allied diseases.

I am sure that I will not be misunderstood in making these remarks. I

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do not decry the value of proper remedies, nor disparage their use when required. They must always have an exclusive and well defined field of usefulness; there are occasions when they are indispensable, if suffering is to be relieved or life saved. This indeed is a matter of common knowledge based upon the ordinary every day experience of mankind. In Cymbeline, Shakespeare acknowledges the value, and likewise the limitation, of therapeutics in these prophetic words:

> "By medicine life may be prolonged; yet Death
> Will seize the Doctor too."

THE UNITED STATES PHARMACOPEIA FROM A PHYSICIAN'S STANDPOINT.

By JAMES M. ANDERS, M.D., LL.D.

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It is generally conceded that the medical profession of America had been for upwards of a quarter of a century, prior to quite a recent date, abandoning more and more official preparations in the treatment of disease. Meanwhile, nostrum-venders and the manufacturers of secret, unethical proprietaries have been taking their devotees from all classes of physicians. This state of affairs gave rise in recent times to unfavorable comment both in the lay and medical press. Certain leaders of the profession began to enjoin upon their fellow-practitioners the severest strictures for allowing themselves to be diverted from ethical, non-secret preparations by the specious pleas and arguments of the detail man, laudatory advertisements and by illicit combinations between themselves and manufacturing pharmacists.

On the other hand, the men who have dared to thus assail their brethren, have been denominated purists whose "preaching and practice" so far from coalescing, are diametrically opposed to one another. According to some, the idea of any reform of the medical profession in regard to this question in the light of modern scientific knowledge is absurd. Such statements as these, however, are calculated to befog the issue, and obscure the prevailing conditions relative to the prescribing of nostrums by reputable physicians.

To-day this idea, this question of the readjustment of the physician's pharmaceutics with a view to eliminating unethical and questionable preparations and remedies, is being seriously considered in many parts of the United States in the medical profession and outside it. The medical profession has clearly entered upon a reconstructive movement which cannot be ignored, but must be continued until the needed disciplinary measures have successfully, prudently and reasonably been applied, and thus American therapeutics be placed upon a more moral and scientific basis.

As a primary requisite to this end, the profession at large must be aroused to the fact that ignorance of the nature and character of the means used with

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which to combat human ills, is to be regarded as being but little short of criminal, and that the public conscience will soon demand that physicians be better taught, and the whole weight of professional opinion and influence be thrown in favor of medical practice conducted on lines within established facts. Somehow or other, those now thoroughly alive to the acuteness of the situation must set in motion forces that will react upon the mind of the general profession, and thus, and thus only, can a changed attitude toward the question be induced.

In its last analysis, the issue is one not merely of professional ethics or method, but of morality. I feel strongly that an appreciation of the moral aspect of the question by physicians is essential for the success of the present reconstructive movement. The time has come when medical men and manufacturing pharmacists, no less than the captains of industry, persons engaged in commerce, and other lines of human activity or endeavor, are expected to live up to their ideals. On questions of moral principle, the medical profession cannot afford to manifest an uncertain tone or attitude; it must train itself up to the standard required of it by an enlightened public.

Remington [1] has well said: "The quack and charlatan play on the ignorance of their victims, and it is entirely foreign to the functions of able physicians to assist, even in the slightest degree, those who employ methods of secrecy or mystery in the preparation or exploitation of their products." That success of the practitioner does not depend solely upon the physical agencies employed, is a self-evident proposition, but he must possess a thorough knowledge of the weapons with which he hopes to effect either curative or palliative results. Such knowledge insures greater certainty of obtaining the effects desired in individual cases and to work thus within the limitations of established facts is the only method that can be honestly pursued.

Now there has been placed at the physician's disposal, an armamentarium, the force, efficacy and reliability of which has been vouched for by men of the highest standing and character, I refer to the Pharmacopeia of the United States. It is only necessary for the practitioner to acquaint himself thoroughly with this work—the product of the combined efforts of master minds of both the pharmaceutical and medical professions—to convince him that it contains no lack of medicinal agents with which to meet any or all therapeutic indications—agents whose pharmacodynamics is better understood because more reliably established than that of the modern non-official proprietary remedies.

It does not seem necessary at present writing to indicate further the character of the contents and the purposes of the United States Pharmacopeia. Suffice it to state that the careful formulation of standards for the potent and other remedies used by the physicians of America, has long been and still is, much appreciated by the medical profession. Mere feelings and expressions of confidence and high estimations of this colossal task, however, are not sufficient; they must be supplanted by strict adherence to the use of official remedies whenever possible in the treatment of disease.

If physicians were as guarded in the estimation of the value of unofficial

[1] Journal of the American Medical Association, October 28, 1907.

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proprietaries and nostrums, as they are in the case of the official remedies, they would less frequently deceive themselves by prescribing the unexploited but reliable preparations and drugs to be found in the United States Pharmacopeia. There are proprietaries which are non-secret, and on the authority of the leading spirits in the reform movement now in progress, including the Journal of the American Medical Association, are also strictly ethical. Hence, every remedy embraced within the domain of therapeutics worthy of being prescribed, is not to be found in the United States Pharmacopeia, but it is susceptible of demonstration that the most prominent, important and reliable medicaments are mentioned therein, and it would seem superfluous to do more than remind my hearers of this well-known fact.

It has been claimed that he who employs United States Pharmacopeia products exclusively, will soon find himself several years in the rear of therapeutic progress. Whilst it may be permissible to employ unofficial, medicinal agents in special instances, *e. g.*, those sanctioned by the Council on Pharmacy and Chemistry of the American Medical Association after thorough scientific investigation, the therapeutic effects desired, as a rule, are more promptly and certainly produced by the exhibition of remedies of known strength, quality and pharmacodynamics such as are to be found in the United States Pharmacopeia.

A knowledge of the physiological effects of the drugs employed, is a prerequisite to the success of every therapeutist. Therapeutics is an art, not a science, but it is based in a measure, at least, on scientific principles— on the known effects of drugs, on animals and healthy man, or Pharmacodynamics. It is for these reasons that the use of official remedies is to be advised and encouraged. On the other hand, it is safe to affirm that the employment in modern times of preparations whose physiological effects, and composition even, remain undetermined, has done much to retard the progress of the art of therapeutics. The same practice has fostered and encouraged self-drugging among the general public—an evil which urgently demands the serious attention of the organized medical profession.

Unfortunately, too many of our medical journals carry advertisements of unreliable and unethical remedies and the suggestion of Kantor,[2] who appeals to physicians to send a postal card forbidding the further sending of such journals, should receive serious consideration. It is in the power of physicians to put a stop to unsavory and misleading advertisements, as well as the sale of non-official preparations unworthy of professional support, by showing proper respect for, and a just appreciation of the Pharmacopeia.

Much may be expected as the result of the proper training of medical students in the future, regarding the contents of the volume under consideration. The undergraduate's knowledge of the subject matter need embrace only a certain, definite portion of this work; this training, however, he must have in order to stimulate the subsequent interest in pharmaceutics. In medical schools in which the professors of materia medica and therapeutics are authors

[2] Journal of the American Medical Association, March 28, 1908.

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of works on these subjects, it is proper and advantageous for the students of such schools to adopt them as text-books, but under these circumstances, teachers should avail themselves of the opportunity to force conviction on the minds of students as to the importance of the United States Pharmacopeia as a work of reference and post-graduate study.

The writer has examined carefully the catalogue of 144 regular medical colleges of this country, and found that of these, 16 have recommended the United States Pharmacopeia, while only one has mentioned the National Formulary. The figures indicate conclusively the lack of sentiment among medical educators favorable to the important matter of instructing students of medicine "as to those portions of the United States Pharmacopeia which are of value to the practitioner." The time has come for the better and more thorough teaching of Materia Medica and Pharmaceutic Chemistry in our medical schools.

The work of bringing about an improved knowledge of the tried remedies of the United States Pharmacopeia, therefore, is partly educational and partly organizational, and it falls naturally within the scope of activity of the American Therapeutic Society to aid in the readjustment and development of scientific pharmaceutics through discussions and demonstrations, such as are proposed here to-day, and in other ways. The aim should be, especially by those in high places, to return by acts and utterances to the more simple and more reliable therapeutic agents of bygone days; or in other words, to advance pharmacotherapeutics along scientific and biologic, rather than, commercial lines.

At all events, physicians should no longer permit themselves to be used as instruments in the hands of manufacturing pharmacists for the commission consciously or unconsciously of inexcusable or criminal acts even, but rather, manifest a ready willingness to remove the enormous burden imposed upon the retail druggist, by the systematic use of official remedies and tried, ethical proprietaries. Not until the spirit that animates the medical world is purged of the last touch of the grosser, commercial aspects of its pharmaceutic armamentarium, will the complexities and difficulties of the problems involved in this ever-present issue, be solved.

Finally, there should be a perfect understanding between the medical and pharmaceutical professions; there should not exist the slightest cause for each to distrust the motives, scientific accuracy of the methods and facts of the other; but on the contrary, harmonious, co-operative efforts, which will render the ground favorable for progressive and advance pharmacy and therapeutics. I submit that day may be near at hand.

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Editorials

SCIENTIFIC INSTITUTIONS, MEDICAL COLLEGES AND HOSPITALS.

THE historical and scientific data go to show that the city of Philadelphia possesses more of the best medical colleges and hospitals than any other city on the continent. This fact will be verified if our readers will but glance at the records of our several institutions, as for example: The University of Pennsylvania, an institution that is second to none in this country, and whose medical department is the oldest in America, began its career with a faculty composed of some of the leading physicians of Edinburgh, who brought with them the best apparatus of the day and which are still on exhibition in the museum of the institution.

Another remarkable institution that adds to the greatness of this city's scientific institutions is the Pennsylvania Hospital, at Eighth and Spruce Streets, founded by Dr. Thomas Bond and supported by the Quakers. It is the oldest hospital in the country, and its buildings occupy an entire square. Thousands of patients are treated here yearly, thus affording rare opportunity for clinical investigations and scientific research in its laboratories.

Among the other historical scientific institutions is the Philadelphia College of Pharmacy which is the oldest institution of its kind in America. It is also the largest, the best equipped for scientific research and has more students from all over the world, than any other similar college in the country. This city also harbors some of the oldest, the best and largest dental colleges in America.

The editor of this journal, a member of the Historical Committee for Founders' Week, to take place from October the fourth to the eleventh, 1908, has called the attention of his colleagues to the great work done by these scientific institutions, consequently a special committee has been appointed to look up data to be presented during Founders' Week. This committee has obtained so many valuable and important facts concerning these scientific institutions, that it now proposes to publish a volume in behalf of the medical profession to point out the early work done by the profession in Philadelphia. Among the many other historic events is the fact that the American Medical Association and the American Pharmaceutical Association both had their origin in Philadelphia. The *Journal of the American Medical Association* was started in this city through Dr. John Packard.

During Founders' Week there will be a central museum in which will be exhibited all the old and modern medical apparatus, and specimens of all kinds. There will also be exhibited a compiled list of physicians and surgeons who are or were residents of Philadelphia, and who have attained fame at home or abroad. Following each name there will be given a brief account of the things that made these men famous.

Among this list will appear the names of such men as Dr. George Mc-

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Clellan, the founder of the Jefferson Medical College; Dr. John Morgan, the founder of the University Medical School; Dr. Philip Syng Physick, the father of American surgery; Dr. William Shippen, founder of the first school of anatomy in America in 1762; Dr. Samuel D. Gross, who laid the foundation of surgical pathology; Dr. D. Hayes Agnew, distinguished surgeon and author; Dr. J. M. Da Costa, father of medical diagnosis; Dr. Thomas Cadwalader, founder of the first medical library in America; Dr. Joseph Pancoast, the celebrated anatomist and surgeon; Dr. Joseph Leidy, the great comparative anatomist; Dr. William E. Horner, Dr. Nathaniel Chapman, Dr. Robley Dunglison, Dr. George B. Wood, Dr. Thomas D. Mütter, Dr. John K. Mitchell, Dr. S. Weir Mitchell, Dr. Samuel G. Morton, Dr. William Pepper, Dr. Benjamin Rush, Dr. Casper Wistar, etc. A special Medical Day will be held for the review of the work accomplished in medicine and surgery during the two hundred and twenty-five years, and at the different hospitals will be held daily clinics and demonstrations in medicine and surgery, thus affording to the medical profession a rare educational opportunity as well as a week of pleasure.

THE DUST AND DIRT OF LARGE CITIES.

Bacteria, both pathogenic and saprophytic, are universally distributed. They are found in the soil, in the water, in the atmosphere, in all vegetable and animal life, and in every nook and corner in the cleanliest homes. There is absolutely no way in getting away from them entirely. The surface of the body is constantly covered with a flora. Koch proved that the surface of the soil is always rich in bacteria, and that their numbers decrease materially as the soil is penetrated until at the depth of one metre there are usually not any present. The reason being that most of them require free oxygen to thrive. The atmosphere is teeming with bacteria especially the saprophytes which are harmless; those of the pathogenic germs, causing tuberculosis, diphtheria, pneumonia and scarlet fever, are the most likely to float around in the atmosphere. Persons having these diseases are prone to expectorate on the sidewalks and on the streets. Consequently the dirt and dust of the streets becomes a nidus of disease germs which is pulverized by the teams and automobiles, and the germs blown from place to place. In all large cities where traffic is always large, dust and dirt is sure to collect in the streets and gutters. Philadelphia enjoys its share, although during the last year more efforts have been made to keep the streets clean than for many years in the past. The immense amount of harm wrought by the dust-laden atmosphere cannot be over-estimated. Contagious and infectious diseases are constantly present in large cities, thus the dirt and dust of the streets are bound to contain myriads of pathogenic germs which in turn are blown from place to place by the wind. The people will inhale the atmosphere laden with the dust containing the germs, and disease is sure to follow. How many people are yearly infected with tuberculosis, diphtheria, scarlet fever, pneumonia, etc., through the atmosphere as a medium, we do not know. If it were possible to estimate

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approximately, the number would be alarming. But how can we alter and better the condition of the atmosphere? First, by teaching the public the danger of spitting on the side walks and to use every sanitary precaution possible in case of disease, by flushing the streets more frequently and by compelling the contractors to sprinkle the streets before they are swept. It is a common occurrence to pass a "white coat" who so raises the dust in the street with his broom that it is almost impossible to pass him. It would only require him a few minutes more to sprinkle the street before he begins to sweep. The streets of this city are sufficiently lighted to clean the streets at night, when the atmosphere is more laden with moisture than during the day, hence less dust would arise loaded with the myriads of germs of all kinds.

The collection of ashes could also be done at night, thus avoiding another dust nuisance. The Department of Public Health and Charities is making every effort to better the surroundings of the public by insisting upon clean streets, better disinfection and stricter rules for reporting infectious diseases.

Materia Medica and Therapeutics.

ACETONE IN INOPERABLE CARCINOMA.

Dr. Gellhorn, of St. Louis, Mo., describes a method of treating the fetid odor of advanced ulcerating uterine carcinoma and points out that radical operation in carcinoma remains the only source of cure. He writes that the trypsin treatment which was introduced with such great enthusiasm in England, has not fulfilled its promises. Both he and other observers have only met with failures. X-rays also have proved incapable of curing inoperable carcinoma. Among the many other vaunted specifics, he merely mentions chelidonium majus, which Winter introduced in 1897, cancroin of Adamklewicz, the use of thyroid gland, the injection of alcohol, acetic acid, perchloride of mercury, snake toxin, turpentine, methylene blue, and formalin. All these and many others have been introduced with promises which were never fulfilled. One has therefore to rely on scraping out inoperable uterine carcinomata and subsequent cauterization with the actual cautery or with chloride of zinc. Lomer has suggested scraping the ulcers out every one or two months, but it will be difficult to obtain the consent of the patient or the relatives for such a frequent operative interference. In considering the condition of the poor women who are found to be suffering from carcinoma which no operation can remove, Gellhorn considers that the fetid odor is one of the most distressing symptoms, which not only affects the patient but also influences those with her, including other patients in hospital wards, nurses, and also the patient's friends at home. Following out a theoretical consideration with respect to acetone, he finds that this substance is a dimethylketone, which has a peculiar effect on tissue. If one places a piece of fresh tissue into acetone, it immediately shrivels up, and within one half-hour is too hard to cut by any microtome. He therefore conceived the idea that if applied to the ulcerating surface of a

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uterine cancer, it would harden the secreting part and limit the secretion and with it the odor. He has carried this idea out in practice, and noticed that not only were the secretion and odor stopped, but that the tendency to hæmorrhage was also markedly lessened. He applied the acetone by the following method. The ulcerating surface of the carcinoma was first thoroughly scraped out, the wound was well dried, and after a tubular speculum was applied from one to two tablespoonfuls of pure acetone was poured on to the wound. The patient was kept with her pelvis raised during the procedure. After from fifteen to thirty minutes the wound was plugged with a narrow strip of gauze; this soaks up all the acetone in excess. The speculum was then removed, and lastly the vagina and vulva were well washed with sterile water. He appends the history of one of his patients in whom the acetone worked exceedingly well. He appears to think that the active growth was arrested, at all events in those situations in which the acetone came into direct contact. He, however, states most distinctly that acetone can only be a palliative remedy, and as such he recommends it to the notice of others. (Muench. Med. Woch., December 17, 1907.)

ARSENIC: ITS DANGER IN CHOREA.

Dr. Henry Koplik, of New York, in a valuable paper, discourages the use of Fowler's solution of arsenic in chorea as producing nephritic symptoms, such as albumin and casts, before the swelling of the eyes occurs. He believes that when this drug is given it should be accompanied by very careful examination of the urine daily, and its use should stop as soon as any signs of nephritis are shown in the urine. He believes that most cases are better treated without it. Neuritic symptoms are sometimes caused by it, that make the patient's condition worse. He considers the best treatment to be a modified rest cure. Isolating a child in bed in a dark room is not only unnecessary but injurious. The child becomes restless and depressed, instead of benefiting by it. The child should have additional rest and a full diet, but should be allowed some quiet play and companionship, with plenty of fresh air and sunshine. Hydrotherapeutics are of great value and liked by the child. Arsenic is especially dangerous in cases in which the heart is involved, and in cases of chorea in which there is loss of speech, paralytic symptoms, and mental depression. Sedatives and strychnine are the best remedies with rest and hydrotherapeutics. (Medical Record January 18, 1908.)

ARSENIC, ITS METHOD OF ADMINISTRATION IN CHOREA.

Dr. J. Gordon Sharp advises the use of arsenic in large doses to stop the movements of chorea in children. The following is his prescription for children from eight to fifteen years of age:—

℞ Tincture capsici, *m*xxv.
Liquoris potassii arsenitis, *m*ccxl to ccc.
Fluidextracti glycyrrhizal (B. P.), *m*ccxl.
Aquæ chloroformi, f℥vj.
Aquæ, q. s. ad f℥xij.

Misce. Signa: One tablespoonful three times daily, immediately after meals.

He seldom gives more than twelve and a half minims, as will be seen; 240 minims represents a dose of 10, and 300 minims a dose of 12½ minims. Since arsenical solution is of the strength of 1 per cent., each dose of 10 or 12½

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minims will represent, respectively, about $^1/_{10}$ grain (0.0065 gramme), and $^1/_8$ grain (0.0081 gramme) of arsenic trioxide, and, practically speaking, in a week the patient takes 2.40 or 3 grains (0.156 or 0.194 gramme), according as the prescription has contained 240 or 300 minims.

When he sees a patient for the first time he prescribes 10-minim doses, but if at the end of a week no signs of improvement are seen, he increases the dose to 12½ minims. The latter procedure is not often necessary, for distinct improvement is more often than not observed at the end of the first week on a 10-minim dose. He says it may be laid down, as a good working rule to follow, that if arsenic is going to do good in chorea it will show its beneficial action within the first fortnight. When the remedy is doing good he continues it till the patient can walk along a straight line and stand on the leg of the affected side with steadiness. This, he says, usually represents a period of three or four weeks, or, at the outside, six weeks.

The patient is kept under observation for three or four days after all movement has ceased, and meanwhile takes the following prescription:—

℞ Sodii bicarbonatis, ʒij.
Tincturæ capsici, *m*xxv.
Fluidextracti glycyrrhizæ, fʒss.
Aquæ chloroformi, fʒvj.
Aquæ, q. s. ad fʒxij.

Misce. Signa: One tablespoonful three times a day immediately after meals. (The Practitioner, February, 1908.)

BISMUTH TREATMENT OF SINUSES.

E. G. Beck, Chicago, describes the method of treating and diagnosing fistulous tracts, tuberculous sinuses, and abscess cavities by bismuth paste injections and radiography, which he has used since March, 1906. He gives the formulæ for the material used, as follows: Formula for diagnosis and early treatment:—

℞ Bismuth subnitrate, 30 grams.
Vaseline, 60 grams.

Signa: Mix while boiling.

Formula for late treatment:—

℞ Bismuth subnitrate, 30 grams.
White wax,
Soft paraffin, of each, 5 grams.
Vaseline, 60 grams.

Signa: Mix while boiling.

The soft paraffin, unlike hard paraffin, is absorbed in the tissues, and the bismuth, being opaque to the x-ray, gives a shadow that shows the shape and ramifications of the cavities. In making the injections, he first dries out the cavity, if possible, by packing with plain gauze, which is removed just before the injection. The emulsion is sterilized before using, and is injected hot and liquid from a sterilized syringe. The first case injected for diagnostic purposes suggested the value of the method for curative purposes also; after one injection of the bismuth paste the psoas abscess fistula of nearly two years' standing closed up entirely and remained closed. Subsequent experience confirmed its value. Beck thinks it probable that the bismuth, which becomes radioactive on exposure to the x-rays, promotes the formations of granulations where it comes in contact with the walls of the cavities, and to increase this effect, in some cases, he has added strontium salicylate. Eleven cases are reported, and the author's conclusions are summed up as follows: "1. A successful surgical operation on fistulous tracts depends principally on the exact knowledge of the extent and direction of the sinuses before the operation is under-

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taken. 2. Radiographs taken after the fistulas have been injected with bismuth paste show the extent and direction of the fistulous tract. 3. Skiagraphs of all fistulous tracts should be taken before an operation is decided on. 4. Fistulous tracts, tuberculous sinuses or abscess cavities, including empyema, can be cured by injection of bismuth paste. 5. Cavities or fistulas should be as clean and dry as possible before the injection of bismuth paste. 6. The bismuth paste, when mixed with wax or soft paraffin, and injected in a liquid state, solidifies in the fistula and serves as a framework for new connective tissue. The paste is absorbed and the fistula obliterated. 7. Bismuth paste injection will not heal out sinuses where sequestra are present; these must be removed before injection. 8. The bismuth paste injections are painless and produce no unpleasant or dangerous symptom." The article is illustrated. (Journal of the American Medical Association, March 14.)

CARBONIC AND LACTIC ACID FORMED DURING MUSCULAR CONTRACTIONS AND RIGOR MORTIS.

The Cambridge University Reporter of March 17th contains an interesting communication from Dr. P. W. Latham on the above subject. He points out that by combining prussic acid with pyruvic acid (acetyl formic acid formed by the dry distillation of tartaric acid) and subsequent hydrolysis methyl-tartronic acid is produced. This acid on decomposition resolves exactly into lactic acid and carbonic acid. Dr. Latham suggests that the nitrile of methyl-tartronic acid which by hydrolysis is resolved into carbonic acid and ammonia formed one of the constituents of proteid matter and that during muscular contraction the ammonia group combined with other constituents, the lactic acid and carbonic acid being alone set free. Some support is given to this view from the fact that in the earlier stages in the genesis of organic matter in plants the nitrile of methyl-tartronic acid can be formed from acetic anhydride and prussic acid. Schutzenberger in his experiments on the decomposition of albumin obtained among other products an isomeride of aspartic acid which differed from it, however, by being highly soluble in water. The suggestion now is that this body was iso-aspartic acid originating from the nitrile of methyl-tartronic acid. Another substance obtained by Schutzenberger was probably a compound of glycocoll and iso-aspartic acid. The conclusion is that these two substances being derived respectively from amino-malonic nitrile and methyl-tartronic nitrile may be regarded as constituents of the living protein molecule. (The Lancet, March 28, 1908.)

CEPHALDOL.

Hugo Einhorn (Zentralbl. für die gesamte Therap., February, 1907) recommends cephaldol, the antipyretic, antineuralgic, and antihydrotic effects of which he has seen tested in hospital practice for a period of several months. Cephaldol is a yellowish-white powder with a somewhat bitter taste; it is almost insoluble in water, but easily soluble in alcohol. It is a reaction product resulting from the action of citric acid and salicylic acid upon phenetidene with neutralization of the excess of free acids. Cephaldol is best given in the form of cachets. The dose varies from 1 to 5 grams daily. In the author's experience one dose of from ½ to 1 gram usually resulted in a fall of temperature of about 1° to 1½° C., but in a few cases, es-

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pecially in cases of erysipelas, a fall from high temperature to normal or even to subnormal might follow such a dose. The fall of temperature usually occurred within about an hour's time, and was sometimes accompanied by much sweating; the sweating was most noticeable in phthisical patients, and frequently was almost absent in patients with erysipelas, even when the fall of temperature was exceptionally great. It was not found possible to cause a permanent reduction of fever by a single dose of cephaldol, and the course adopted was either to give small doses of from 0.25 to 0.5 gram at hourly or two-hourly intervals until the dose of 4 grams for the day was reached, or to give one large dose of about 1 gram, and to follow it up by repeated small doses when the temperature began to rise again. By either of these methods a reduction of fever could be obtained for as long as the drug was being administered and until the temperature had once more become normal, without further need of an antipyretic agent. The antipyretic action and a resulting improvement of general condition was especially noticed in cases of erysipelas. In none of the cases did cephaldol appear to have any harmful effect, either temporary or permanent, upon the circulation, but the pulse tended rather to become fuller and stronger; even in cases with degeneration of the heart muscle and marked weakness of the heart complicating an acute fever, cephaldol could be safely given in large doses. Cephaldol was also without any irritating effect upon the kidneys, nor did it disturb the psychical condition. A few patients complained of unpleasant gastric sensations after taking cephaldol and in isolated cases vomiting occurred, but the complaints were usually made after the first or second doses, and later doses were not accompanied by any discomfort. In no case was there any complaint of intestinal symptoms after taking the drug. The antihydrotic action of cephaldol was well seen in a series of cases of phthisis with night sweats. The patients took a dose of 1 gram at night; sweating soon followed and quickly disappeared, leaving the patient with a sense of pleasant coolness which was not interrupted by the ordinary night sweating; in all but 3 out of 15 cases a striking improvement was seen. As an antineuralgic cephaldol was of no service in acute rheumatism, but did good in chronic rheumatism. It was specially useful in certain nervous diseases; thus, in a case of syringomyelia with very strong neuralgic pains, the pains were completely lost under repeated doses of 0.5 gram of cephaldol, returned when the use of the powder was discontinued, and disappeared again when it was once more resumed. In the neuralgic and shooting pains of tabes cephaldol had a noticeably good action, even in one case in which almost all the other antineuralgic remedies had been previously tried without result. For a nervous headache cephaldol acted as well as the other customary remedies; upon headaches the result of brain tumor or meningitis it had no action. Notes of 9 cases which demonstrate the action of cephaldol are given. The author finds that cephaldol is an antipyretic of prompt action and excellent result in certain acute and chronic diseases accompanied by fever. The indication for its use as an antineuralgic agent is the presence of any purely neuralgic or neuritic symptoms; the action is less prompt in acute, but better in chronic articular affections. He confirms Fritsch's opinion on the value of cephaldol as an antihydrotic agent. (British Medical Journal.)

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CHLORAL HYDRATE ADMINISTERED BY RECTUM.

℞ Chlorali hydrati, ʒss to j.
Yolk of one egg,
Milk, fʒiij.

Misce. Signa: Inject by means of a rubber hand-syringe.—Richmond.

CYANIDE OF MERCURY WITH BORAX IN SURGICAL PRACTICE.

Dr. Paul Lemaire in a recent number of the Répertoire de Pharmacie draws attention to the advantages of a mixture of cyanide of mercury and borax in surgical practice. Cyanide of mercury is less caustic and less irritating than the perchloride and does not coagulate organic matter. Dr. Maréchal, of Angers, showed in 1896 that steel, copper, and nickel instruments are not attacked when immersed in 2 per cent. aqueous solutions of various sodium salts, including borax and the carbonate, bicarbonate, and benzoate of sodium. The addition of borax to cyanide of mercury has been tried also in obstetric work. For convenience these antiseptics may be compressed in the form of tablets containing suitable coloring matters to give the resulting solutions a distinctive appearance. Dr. Lemaire recommends a combination of mercuric cyanide 1 gramme, borax 2 grammes, potassium chromate 0.075 gramme, and fluoresceine 0.001 gramme. One of these tablets dissolved in a litre of distilled water yields a convenient antiseptic solution. (The Lancet, March 21, 1908.)

DIPHTHERIA ANTITOXIN IN THE TREATMENT OF PSEUDOMEMBRANOUS NON-DIPHTHERITIC CONJUNCTIVITIS.

Dr. Fromaget, in La Semaine Médicale, November 27, 1907, reports the use of diphtheria antitoxin in the treatment of purulent conjunctivitis which, while membranous in character, was not due to the Klebs-Löffler bacillus. The first case reported by Fromaget was in a child, aged three years, in whom the ophthalmia was intense, involving both eyes, with great swelling of the lids, abundant purulent discharge and false membranes covering the conjunctivæ. When the usual remedies failed, Fromaget suspected a diphtheritic infection and injected a dose of 10 cubic centimeters of the serum. On the following day the child opened its eyes and the cure was complete forty-eight hours afterward. Yet the bacteriological examination showed that the infection was due to pneumococci. In a second case, the patient was a newly born infant with a pseudomembranous conjunctivitis. Within a few hours after the injection of the serum, an ulcer was discovered in the lower part of the cornea. Within two days, the swelling and the false membranes had entirely disappeared. The ulceration had begun to heal and the purulent discharge had disappeared. On examining the ulcer, it was found that it was due to the pneumococcus associated with the streptococcus. The author concluded that antidiphtheritic serum should be used in all cases that are accompanied by the formation of false membranes, no matter what their bacterial origin may be. (La Tribune Médicale, April, 1908.)

DOUCHING IN HEPATIC DISEASES.

Drs. Raymond and Duchesne, in Gazette des Eaux, Post-graduate, claim that if douching over the liver is applied properly, it is one of the most effective means in diseases of the liver and gall passages. It has, of course, no influence upon the cirrhotic tissue and

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atrophy, but will produce good results in hyperplastic, hypertrophic and congestive conditions and bile stagnation, jaundice, dull pains and mild colics. As there exists a general connection between the circulation of the skin and the abdominal cavity and a special one between the skin over the liver and the depth, hyperemia of the skin means depletion of this organ, of course temporary only after one application, but repeated it will lead circulation into a normal way and state. The treatment requires first a general warm (100-113° F.) rain and then a movable spray of the same temperature upon the liver region until the skin is decidedly red, followed by a cold or alternate (cold and warm alternately) jet for 10-30 seconds upon this organ. The rationale of this proceeding is decongestion of liver and gall-ways by the warm water and then restoration of the normal tone by the cold and vibration of the jet. The more sensitive the part and the more pain, the longer the warm douche and the milder and shorter the cold jet; the more torpid the condition the longer and heavier the cold jet. Thus congestion is reduced, flow and excretion of the gall increased, icterus bettered, pain relieved and the activity of the parenchyma led to the normal. (The Dietetic and Hygienic Gazette, March, 1908.)

EXERCISE AND OPSONIC INDEX IN PULMONARY TUBERCULOSIS.

Dr. Inman's paper clearly demonstrates the relation between the opsonic index and the amount of work done, that the explanation of the satisfactory results obtained by graduated labor lies in autoinoculation of the patient with his own tuberculin. Inman's observations were conducted on numbered specimens only, his laboratory investigations being, therefore, unbiased by the clinical knowledge. The absolute correspondence, therefore, between Inman's opsonic findings and Paterson's clinical results as regards the relation of exercise to tuberculosis is remarkable. The practical outcome of Inman's investigations is that the labor scheme devised and carried out by Dr. Paterson has been submitted to a new scientific test, by means of which its effect on the blood of the patient has been traced. The opsonic index has shown that the exercise has supplied the stimulus needed to induce artificial autointoxication and that the systematic graduation of labor has scientifically regulated the autointoxication in point of time and amount. This co-operation with the natural efforts of the blood has enabled Paterson to send his patients back to their accustomed work, however hard it may be. But the investigation has done more than explain a successful mode of treatment. Paterson agrees with Inman that with the aid of the opsonic index the stimulus can be regulated with scientific accuracy and the clinical results can be obtained more certainly and rapidly. While this involves work in the laboratory, it means a more rapid and certain discharge of the patient, which is the main object of the sanatorium, and as a consequence of this the power to treat a larger number of patients. (The Lancet, January 25th.)

FOR ODOROUS FEET.

Picric acid, 5 grammes.
Alcohol, 100 grammes.

M. Use on foot in cotton for eight days. (Journal de médécine de Paris.)

HEXAMETHYLENTETRAMINE AND ITS SALTS.

Dr. P. Bergell, in the Dent. med. Woch., says that in spite of the im-

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portance of hexamethylentetramine, little is known of its chemical constitution and of its behavior in the body.

In order to follow this subject out more exactly, he deals with (1) a method of preparing it from urine; (2) a method of determining it as a double salt with mercuric perchloride; and (3) the proof that while the substance appears in the urine, about 50 per cent. of the quantity taken in is oxidized in the organism. (1) The preparation of hexamethylentetramine from urine is as follows: 500 cubic centimeters of urine are rendered just alkaline with ammonia, and is then concentrated to a syrupy consistence *in vacuo* at a temperature of from 50° to 60° C. The residue is mixed well with about 50 grains of dehydrated sodium sulphate, and then dried sharply *in vacuo* over sulphuric acid. Lastly, it is boiled out several times with chloroform. After getting rid of the chloroform the residue is extracted in absolute alcohol, and the hexamethylentetramine is precipitated from the solution by passing gaseous hydrochloric acid through. The method can be employed as a quantitative method. (2) Determination in urine. To 50 cubic centimeters of normal urine 1 gram of hexamethylentetramine is added, and the solution is acidified with acetic acid. The substance is then precipitated out of solution with 130 cubic centimeters of a 10 per cent. solution of perchloride of mercury. This is allowed to stand for twenty-four hours at room temperature. The precipitate is removed by filtration, and well washed with a weak solution of the perchloride of mercury acidified with acetic acid; it is then transferred into a Kjeldahl flask. After destroying the organic matter the fluid is brought up to 500 cubic centimeters, and of this 100 cubic centimeters are used for N determination. The determination, carried out in this way accounted for 93.3 per cent. of the hexamethylentetramine. Feeding a dog with 6 grams of this substance he only recovered—that is, determined—2 grams in the urine. Hexamethylentetramine as an organic base forms salts and double salts with acids. It can behave as a monavalent and divalent base. A solution of hexamethylentetramine and sodium acetate in the molecular proportion of 1 to 2, after concentrating *in vacuo*, behaves differently to solutions containing 1 molecule of the base and 1, 1¾, 2¼, etc., molecules of the acetate. It can be shown that in the former case a double salt has been found. These salts can be obtained in a chemically pure condition, and are suitable for therapeutical purposes. They are known by the name of "cystopurin." Hexamethylentetramine is soluble in water at 15° C. in proportions of 1 to 1, while in warm water it is less soluble. Sodium acetate is soluble in water at 15° C. in proportions of 100 parts of water to 33 parts of salt, while the same quantity of warm water dissolves 200 parts of salt. Cystopurin, in spite of its sodium acetate content, behaves differently; 1 part of water at 15° C. dissolves 0.9 parts of salt, while 1.5 parts of hot water dissolves 1 part of salt. The chemical formula would be $(CH_2)6N_4\,2CH_3CO\text{-}ONa+6H_2O$. Cystopurin can be prepared from formalin, ammonia, and sodium acetate. The author says that any one who takes the trouble to compare the chemical and bacteriological properties and also the dosage of the three substances, formalin, formaldehyde derivatives, and hexamethylentetramine, will realize that the action of the latter cannot depend on the splitting off of formaldehyde. (British Medical, February 15, 1908.)

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IODINE (TINCTURE) IN PUERPERAL FEVER.

Aldo Mergari in La Riforma Medica, reports his method of using iodine as an intrauterine injection in cases of puerperal fever. It has had favorable results even in severe cases. He disinfects the vagina, in case it is necessary lightly curettes the endometrium, and by using a Doleris sound injects into the uterus from 150 to 200 grammes of a mixture of equal parts of tincture of iodine and warm water. It is necessary to make sure of a return flow. After some minutes, or on the slightest pain, the fluid is allowed to flow out, and the cavity is washed out with boiled water to remove the excess of iodine; no tampon is used. The author reports a cure in seven cases of puerperal fever with very rapid results from the injections. The good results are ascribed to the large amount of iodine used and the nascent state of the iodine. (La Tribune Médicale, April, 1908.)

LACTIC ACID FERMENTS IN TROPICAL DISEASES.

Dr. Guble, in the Journal of Tropical Medicine and Hygiene, considers the antiferment action of the lactic acid treatment to be the most remarkable and complete in infantile diarrhea, intestinal fermentation, tropical diarrhea, dysentery and various forms of gastric and enteric diseases common in hot countries.

The curdled milk may be prepared by mixing a specific quantity of boiled milk (even condensed milk will answer) with the powdered ferment or a suitable quantity of the bouillon culture in a suitable warm chamber for from eight to ten hours, by which time the milk will be curdled. Any supernatant liquid is decanted off and the product put into a cool place. It keeps good about two days. The organisms being robust and quite innocuous to the human being, oust the butyric and other irregular organisms and inhibit every form of fermentation except their own. This treatment is useful also in furunculosis and recurrent abscess. It is recommended as a prophylactic, since intestinal fermentation paves the way to all the infective intestinal conditions that prove so fatal in hot countries. If the milk is too acid a little sodium citrate or bicarbonate or magnesium carbonate may be added. (The Dietetic and Hygiene Gazette.)

MARMOREK'S SERUM IN SURGICAL TUBERCULOSIS.

Hoffa, Berl. klin. Wchnschr., records a favorable opinion of the value of Marmorek's serum in surgical tuberculosis. The author has used it both by subcutaneous and by rectal injection, and very much prefers rectal injections, owing to the absence of local or constitutional disturbance and the satisfactory results following their use. Up to the date of his paper he had treated twenty-two cases for a sufficiently long period to enable him to form definite conclusions, and he states the results in percentages as follows: 18 per cent. were cured quickly and completely; 18 per cent. were remarkably improved; and the rest were apparently not materially influenced by the injections. The treatment never caused any exacerbation of the disease. The cases were of the ordinary clinical types, hip, knee, and ankle-joint disease, etc. The rectal injections were given daily, 5 to 10 cubic centimeters being injected at a time. Hoffa declares his opinion that the serum is of definite value in the treatment of tuberculosis, and its complete harmlessness, and the simplicity of the method of using it, are

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points in its favor. (The New Albany Medical Herald, March, 1908.)

NEUROPRIN IN EPILEPSY AND NEURASTHENIA.

Trevisanello (*Gazz. degli Osped.*, August 25, 1907), under the direction of Professor Maragliano, has tried the effect of neuroprin in certain neuroses. The drug in question is an extract of nervous substance, and, according to certain experiments carried out by Sciallero, it has the power of rendering mortal doses of strychnine non-fatal when injected into guinea-pigs which had previously been given neuroprin. The author gives brief details of 16 cases, and refers to 6 others. Of these 22 cases, 9 were epilepsy and 13 neurasthenia. Distinct benefit was derived from the treatment in all except 2 cases (neurasthenia of a depressive type). The usual dose was four teaspoonfuls *per diem*. The best results were obtained in epilepsy and in neurasthenia of the hyperexcitable type. In neurasthenia of the hypochondriacal type better results seem to be obtained with cephalopin, or with cephalopin in combination with neuroprin. The author compares neuroprin to digitalis; what the one drug is to the cardio-vascular system, that the other is to the nervous system—namely, a true tonic. Cephalopin affects the nutrition of the nervous system and acts as an antineurotoxic agent. (British Medical, March 28, 1908.)

OLIVE OIL AND COTTONSEED OIL IN STOMACH TROUBLES.

Drs. Cowie and Munson, in a paper on the above subject give their conclusions as follows: Olive oil and cottonseed oil, when given in connection with the usual test breakfast, decrease the gastric acidity at the end of the hour and retard the evacuation of the stomach. The beginning of the secretion of hydrochloric acid is delayed when oil precedes the meal, unchanged when oil follows the meal. The height of digestion is delayed when oil is given either before or after the meal. The height of secretion is lowered when oil precedes the meal, unchanged when oil follows the meal. If the progress of digestion is watched by the removal of small samples of stomach fluid at frequent intervals it will be observed, when oil precedes the meal by one-half hour, that at the end of what is usually taken as the digestive period for a test breakfast (three-fourths to one hour) the acidity is distinctly lower, while as great a height as is present in the control meal is frequently reached some minutes later. The action of oil on the stomach functions is only a temporary one. It has no effect on subsequent meals unaccompanied by oil. The therapeutic value of oil is apparent. In suitable cases it is preferable to antacids because of its calorific value. In hyperchlorhydria it should precede the meal. In hypochlorhydria it should follow the meal. In stasis and persistent slow evacuation it should be eschewed. In hypermotility it may be given before, during, or after the meal. Oil lowers the gastric secretions both by reflex centrainhibitary stimulation and by mechanical action. (Archives of International Medicine, Chicago, January, 1908.)

OPIUM IN PERITONITIS.

Dr. Stocton, of Buffalo, believes that opium, from clinical experience and physiologic experiments, is exceedingly useful in the milder cases of peritonitis before the inflammation has become general in the abdominal cavity. Dr. Alonzo Clark taught that the largest safe doses of opium should be administered with long intervals, yet never allowing the pa-

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tient to emerge from its complete sedative effects. Stockton is convinced of the truthfulness of the claims put forward by Clark if his principles are adhered to, but the moderate use of opium results only in covering up symptoms, not in curing the patient. Opium controls abdominal shock, favors the intra-abdominal circulation by overcoming the spasm of the abdominal parietes and the spastic state of the vessel. He also believes that the proper treatment of oncoming septic peritonitis is immediate operation, but that when the operation is delayed and the inflammation is becoming general it is safer to use the full opium treatment until such time as the suppuration is localized and drainage effected without molesting the greater part of the abdominal cavity. (Buffalo Medical Journal, February, 1908.)

POTASSIUM BITARTRATE IN WOUNDS.

Dr. Lupa has published his experiments which showed that a piece of meat could be kept intact for two months in a solution of potassium bitartrate. As a dressing for wounds it seems to inhibit bacterial growth, putrefaction and fermentations while it stimulates granulation and cleanses the region, and is free from toxic action and odor. Mazzini adds to these virtues its efficacy in arresting necrotic processes in the bones and gangrenous processes, as it modifies conditions until the parts heal. It acts better when applied as a powder or on gauze, rather than in aqueous solutions, as water has an injurious influence on the tissues. The effect of the bitartrate is enhanced by alternating it with some other antiseptic or sterile dressing. He has used it on hundreds of soldiers with various affections and lesions and has always been pleased with the results, which he attributes mainly to the liberation of nascent oxygen as the bitartrate comes in contact with the blood or local secretions. (Gazetta degli Ospedali, January 5, 1908.)

ROENTGEN RAY TREATMENT OF EPITHELIOMA.

In an illustrated article, W. A. Pusey, Chicago, gives his personal experience with the x-ray in patients treated more than three years ago. Excluding a few cases which at the time of beginning treatment were complicated with demonstrable carcinoma of neighboring glands, the total number of epitheliomas treated is 119. He has been able to follow up the record of all but 8 of these, leaving 111 to be considered. Of this number, 80 patients are either well to-day or have died from other causes without recurrence of the epithelioma. Eight are dead from other diseases, 1 has been well over six years, 11 are well over five years, 22 over four years, 32 over three years, and 6 were living more than three years, but have since been lost trace of. Two patients are counted as practically cured. One of these died of pneumonia fifteen months after treatment with a minute suspicious looking spot remaining unhealed. In the other there is a small non-progressive ulcer resembling an x-ray burn remaining. In both cases the original disease was very extensive. Seventeen patients are classed as only distinctly benefited; that is, the disease was checked and life prolonged with comfort for at least a year, except in one case in which the patient, a man over 80, died within the year. All of these cases were recurrences after surgical removal of the growth and hopeless as regards other treatment than the x-ray. Brief reports

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are given of several of these cases. In only 12 out of the whole number was the treatment counted as a failure, though in several there was some benefit afforded. Counting all the 31, however, which are classed as not entirely successful or as failures, there remain 80 cures out of the 111, or 72 per cent., a showing which Pusey thinks will equal that afforded by any other method of treatment. (Journal of the American Medical Association, January 11th.)

SALINE INJECTIONS FOR SCIATICA.

Siccard employs injections of normal salt solution along the nerve for sciatica. He reports very good results with this treatment. The injections are given in one of three places: either in the epidural canal or in the groove between the ischium and the trochanter, or lower in the middle parts of the thigh. Each of these points is used in succession, the dose of each injection being 10 cubic centimeters. It is best to use the isotonic solution containing sodium sulphate, sodium chloride or sodium phosphate, with a small amount of cocaine or some other local anæsthetic. (Journal de médécine de Paris.)

SANTONIN IN DYSENTERY.

Dr. Drake reports sixty-five cases of dysentery treated with santonin in two tea estates in Siam. Each alternate patient was treated with 5 grains of yellow santonin in 2 drams of olive oil three times a day on alternate days, the patients not so treated being given bismuth, salines, ipecacuanha or astringents, or a combination thereof, according to ordinarily recommended methods. On one estate 6.58 days was the average time taken to effect a cure by santonin, and the deaths numbered three, while the treatment by other remedies averaged 13.1 days, with thirteen deaths. Twenty-five patients were submitted to each form of treatment. The average number of days in the second case was 9, with no death under santonin, while under other drugs it was 30, with two deaths. (Journal of Tropical Medicine and Hygiene.)

SODIUM PERBORATE: ITS USES.

Dr. A. Hartmann describes sodium perborate as an excellent remedy in the treatment of catarrhal, suppurative, or ulcerous processes of the mucous membranes. It occurs as a white powder, which dissolves to the extent of 2.5 per cent. in water, and which contains 10 per cent. active oxygen. In contact with organic matter the oxygen is given off, and sodium borate remains behind. It thus combines the properties of free oxygen with those of sodium borate. Applied to the mucous membrane of the middle ear, it soon checks the discharge. The same is true in the case of cavities resulting from mastoid operations. Acute coryza may be aborted by applying the powder as snuff; but, if already developed, the secretion will soon cease, and breathing through the nose will again be possible. The powder was also applied with good result in syphilitic ulcer of the pharynx, where a decided anæsthetic action was noticed. In tuberculosis of the larynx the drug should be used sparingly, as large amounts of the powder insufflated may cause too much irritation. Bacteriological examination showed that the drug has a much stronger bactericidal action than boric

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acid. (Deutsch. Med. Woch., 1907, No. 38.)

SUGAR IN THE TREATMENT OF FRESH WOUNDS.

Meyer (Zentralbl f. Chir., No. 33, 1907) holds that the use of gauze as a direct dressing to fresh open wounds is attended by serious disadvantages. Such dressing is apt to adhere to the raw surface so that it cannot be detached without causing pain and irritation, and without leaving adherent fibres which act as foreign bodies. Moreover, in deep wounds in which muscle is freely exposed, the deeper layers of the gauze may become saturated with abundant wound secretion, and act as culture ground for germs derived from the air and from the skin in the neighborhood of the wound. During the last two years the author has obtained excellent results from the use of brown sugar sterilized by heat and mixed with a small percentage of salicylic acid. A thick layer of this mixture is spread over the open wound, and over this is applied a gauze dressing. The sugar, it is stated, takes up the effused blood and wound secretion very energetically. At a change of dressing the small dry masses of brown sugar can be easily removed without causing any pain by a stream of sterilized water, and a fresh layer of sugar is then applied. The freedom from pain and the absence of reaction in wounds thus treated by the author have convinced him that sugar, by its capacity for absorbing wound secretion and of thus keeping the raw surfaces quite dry, may be relied upon as a sure agent for protecting the open surface against infection. Sugar has been very useful in crushing of the fingers with exposure of tendons and articular cavities. It is contraindicated in cases of very foul wounds, and also of wounds showing a tendency to bleed. (British Medical.)

SULPHONAL.

Sulphonal is a member of the disulphonic family. It is an organic sulphur compound, containing two So_2 atom groups in combination with the carbon radicle. It was introduced by Kast in 1887. It exists as colorless, translucent crystals, without smell or taste, and its chemical reactions are indifferent. It is soluble in 15 parts of boiling water, or in 500 parts of cold water. It is more easily soluble in alcohol, ether, or chloroform.

I usually prescribe this drug to be taken in wafers, occasionally to be dissolved in soup or hot tea. Two grammes is a medium dose; 1 gramme may suffice for a woman, a man may require as much as 3 grammes, but I have never had to exceed this. The patients comprised victims of melancholia, mania, hysteria, paranoia, general paralysis, and imbecility, and the hypnotic effect of the drug was attained in all of these. With extended experience, the results were not so consistently good, but still great excitability could always be quieted by means of it, even when other hypnotics had been unsuccessful. The sleep induced is a more profound one than that which results from paraldehyde or amylene hydrate, deeper even than the sleep yielded by chloral, and its duration is practically the whole night. Its action is also more rapid than these drugs. But I cannot ascribe any sedative power to sulphonal. It exercises no effect on pulse, temperature, respiration or appetite. Indeed some of the more intelligent patients stated that it stimulated appetite. On the other hand, I have noted that a long continuance of the drug is responsible for a weakening of the motor functions of the body, more especially a sense of weariness and loss of tone.

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The gait becomes unsteady and uncertain, the articulation becomes slow and hesitating, simulating that of the general paralytic. In one case I observed actual paresis of a limb. All these symptoms abate when the drug is discontinued, and by the second day they disappear totally. The average dose was 2 to 3 grammes per diem in one case 4 to 5 grammes were taken daily for a fortnight. When small doses, such as 1 to 1.5 grammes per diem, were administered, none of the just mentioned by-effects were produced. Other observers have abundantly confirmed my own personal experiences with sulphonal. Lately I have not exceeded 1 to 2 grammes per diem, and although this frequently acts as a hypnotic, the results cannot be described as excellent. Sulphonal, however, must be regarded as a valuable hypnotic, and merits general employment. Its advantages consist in the absence of odor or taste, and its comparative solubility in hot fluids, such as soup, so that it can be given to obstinate patients without their knowledge. (Folia Therapeutica, January, 1908.)

TRIONAL.

This differs in chemical construction from sulphonal in the circumstance that one of the methyl groups attached to the carbon radicle is replaced by an ethyl group. Schultze first used trional in mental practice in 1891, and in some quarters it practically supplanted sulphonal as a hypnotic. It possesses some advantages over sulphonal, being more soluble, sufficing in smaller doses, .5 to 1 gramme being enough to produce its hypnotic effect in women. Moreover, it is apparently free from those untoward symptoms occasionally present after sulphonal. Some authors have, however, described toxic manifestations even after trional. I have occasionally seen the gait and speech of general paralytics become worse after taking this drug, and recover again when it is left off. Small doses are insufficient for adult males, 2 grammes being necessary on an average. Some observers have reported the appearance of blood in the motions, but I have never been able to detect this. Trional seems to act better when it is used alternatively with sulphonal, or replaced occasionally by some different hypnotic. It may be for this reason that I have not witnessed any disturbance of motor powers after taking the drug in the case of non-paralytics. Pain is relieved neither by trional or sulphonal. I have used and still use trional very extensively in all forms of mental disease. (Folia Therapeutica, January, 1908.)

TRYPSIN IN CANCER.

Dr. Alcinder reports two cases of cancer treated with trypsin by Beard's method. He concludes that lowered vitality from any cause is the predisposing factor in malignant disease and chronic irritation the determining factor; and further, that trypsin is of considerable value. He claims also that gout, rheumatoid arthritis, and chronic rheumatism ought to be treated by injections of trypsin when other better-known methods have failed. Amylopsin, whether used alone or with trypsin he has found of no value. (British Medical, January 11, 1908.)

TRYPSIN IN MALIGNANT DISEASE.

Dr. Donati reports a case of sarcoma of the testicle successfully treated with in-

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jections of trypsin. The man, aged 52, first noticed symptoms in the summer of 1905. In January, 1906, he sought advice owing to pain in the lumbar region and for a left inguinal hernia. An operation was performed on January 29, 1906, the testicle and cord removed as far as possible, but owing to deep-seated glands in the iliac region, it was impossible to remove the growth completely. On microscopic examination, it was found to be a round-celled sarcoma. The wound suppurated, and when the patient left the hospital in March there was still a fistulous track and the lumbar pains were worse than before; a hard mass of new growth had formed in the site of the wound. Radiotherapy was tried, but gave no relief. On May 17 a further operation was performed, and as much of the growth removed as possible. The wound broke down again, and nodules of new growth soon reappeared. It was then decided to try the trypsin treatment, and, on June 10th, 2 cubic centimeters of a 2-per-cent. solution were injected into the gluteal region; no immediate result followed, and the injection was repeated on the 12th (not in the gluteal region, but in the neighborhood of the growth). The treatment was carried on for seven months, and about 130 cubic centimeters were injected in forty-five sittings, either in the region or in the substance of the growth itself. The injections had to be abandoned for short intervals, either owing to pain or constitutional disturbance. But at the end of the treatment the wound remained closed, and the growth, as far as one could feel, was completely absorbed; the lumbar pains had disappeared, and the man was able to follow his employment without fatigue. The mass removed in the second operation had the same characters as before, namely, round-celled sarcoma. The patient remained well at the date of the report. (Rif. Méd.)

TRYPSIN IN MALIGNANT TUMORS.

Dr. Graves, of Boston, discusses this treatment and reports six cases which he treated with the drug. The treatment began in September, 1906, and in every one of his six cases there was gradual inevitable progress of the disease; four patients are dead and two, though still living, will undoubtedly die very shortly. On the other hand, he states that a few injections of trypsin into one of the circumscribed nodules that occur in recurrent breast cancer will cause the nodule either to disappear, or to shrink greatly, and that particular nodule will not grow again. A section of such a shrunken nodule after several treatments shows under the microscope the remains of destroyed cancer cells, while the somatic cells of the connective tissue remain intact and healthy. It cannot be claimed that any great advance has been made in the actual cure of cancer by trypsin, but the scientifically established facts that trypsin has a specific destructive action on the cancer cell and on the deadly ferment that it secretes gives at least a gleam of hope that an effective method of applying the remedy may yet be discovered. The last word concerning the trypsin treatment and the germ cell theory of cancer has not yet been said, and he believes that embryologic and cytologic inquiry points the road for future investigations. (Boston Medical and Surgical Journal, January 23, 1908.)

TUBERCULIN IMMUNIZATION.

Dr. Trudeau, in writing on the subject, says that the specific treatment of tuberculosis by tuberculin is based on the

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principle of artificial immunization. Experimental work has shown that immunity may be produced in animals to a certain degree. The difficulty with artificial immunity in general is that there is little evidence that one attack will protect from another. The part played by antitoxins, antibodies, agglutinins, bacteriolysins, and opsonins is as yet imperfectly understood, but it may be taken for granted that they are all factors in the attempt to protect the body against bacterial infection. If tuberculin is used by the clinical method, it is observed that infinitesimal doses, methodically increased, result in a well-marked degree of toxin immunity, which is shown by increased toleration to larger doses of toxin.

The two most important factors in obtaining results are the length of time over which the treatment is extended and the dose of toxin the patient can be made to tolerate. Reparative changes are necessarily produced slowly, and antitoxic or antibacterial immunity is also slowly induced. Not much permanent benefit can be expected from treatment lasting only a few months, especially if a fraction of a milligram is the highest dose reached when the treatment is discontinued. (Journal of American Medicine.)

WATER TREATMENT IN POST-OPERATIVE VOMITING.

Dr. MacArthur gives his patients, two hours before operation, from 8 to 12 ounces of cold, fresh water, and half an hour before the operation, another 8 ounces. Out of 35 cases only 4 patients were troubled with slight post-operative vomiting, but there was no straining or retching. MacArthur has found the method mentioned a very valuable one. (Montreal Medical Journal.)

Book Reviews.

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., M.A., F.R.S. (Edin.), Professor of Physiology at the University and Bellevue Hospital Medical College, New York City. Octavo of 326 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $2.50 net.

In this work the author considers the feces, starvation, the regulation of temperature, the influence of proteid food, specific dynamic action of the foodstuffs, influence of the ingestion of fat and carbohydrate, normal diet, influence of mechanical work on metabolism, metabolism in anæmia, at high altitudes, in myxœdema and in exophthalmic goiter, etc.

As a whole the work is an excellent review of the scientific substratum upon which rests the knowledge of nutrition both in health and in disease.

DISEASES OF THE HEART. By Professor Th. Von. Jurgensen, of Tübingen; Professor Dr. L. Krehl of Griefs-wald; and Professor Dr. L. Von Schrotter, of Vienna. Edited, with Additions, by George Dock, M.D., Professor of Medicine, University of Michigan, Ann Arbor. Octavo of 848 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $5.00 net; Half-morocco, $6.00 net.

This is one of the most thorough works on heart disease in the English language. The different phases of heart disease are taken up in every detail and so thoroughly that nothing remains to be added. The work is absolutely up-to-date.

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The general arrangement of the subject matter, the sections on diagnosis and treatment, will prove especially useful to the practitioner who wishes to keep abreast with the latest teachings and methods of treatment. Nathnagel's work on medicine is one of the great masterpieces in medical literature and the appearance of this American Edition should be hailed with delight by every member of the medical profession.

Practical experience with this work on the practice of medicine has proved that the author is one upon whom much dependence may be placed and an examination of this American version shows that it is worthy of both its author and editor.

SURGICAL THERAPEUTICS. By Emory Lanphear, M.D., Ph.D., LL.D., St. Louis, Mo. Professor of Surgery, Hippocratean College of Medicine; Formerly Professor of Operative Surgery in the Kansas City Medical College and Professor of Surgery in the St. Louis College of Physicians and Surgeons; Chief Surgeon to the Woman's Hospital of the State of Missouri,Chicago. The Clinic Publishing Company. 1907.

The object of this little volume of three hundred and seventy pages is to give some of the important points neglected by or omitted from the more extensive works on surgery. The volume particularly takes into consideration the proper management of the patient *without* operation, and the best way to make patients comfortable after operation, and of the right management of the wound to get ideal results.

The country practitioner, or the city practitioner, who undertakes the management of surgical cases in the home of the patient, will find this little work most interesting and valuable.

SURGERY: ITS PRINCIPLES AND PRACTICE. In Five Volumes. By 66 Eminent Surgeons. Edited by W. W. Keen, M.D., LL.D., Hon. F.R.C.S., Eng. and Edin.; Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume III. Octavo of 1132 Pages, with 562 Text Illustrations and 10 Colored Plates. Philadelphia and London: W. B. Saunders Company, 1908. Per volume: Cloth, $7.00 net. Half-morocco, $8.00 net.

The same high standard of excellency that we found in the previous volumes of this work is continued in this volume. The volume consists of 1095 pages taking up the surgery of the head, neck, thyroid gland, nose and its accessory sinuses, larynx and trachea, thorax, breast, mouth, teeth and jaws, tongue, abdomen, abdominal wall, peritoneum and retroperitoneal space, esophagus, stomach, liver, gall-bladder and biliary ducts, pancreas, and the spleen.

The different subjects are taken up in such minute detail and accuracy that nothing remains to be added. The volume contains the very latest information concerning the subjects under consideration.

The book is well bound, reads easily, and the text is profusely illustrated. This work will beyond any doubt stand as a monument in works on surgery and should find its way into the libraries of the different members of the profession, as well as into the libraries of medical colleges.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

THE THERAPEUTICS OF CARDIO-VASCULAR DISEASE.[1]

BY FREDERICK P. HENRY, A.M., M.D.

Professor of the Principles and Practice of Medicine at the Woman's Medical College of Pennsylvania; Physician to the Philadelphia Hospital, etc.

Etiology.—The subject of cardio-vascular disease, which is practically identical with that of arteriosclerosis, is one of the most important that can engage the attention of the physician. It involves questions of anatomy and physiology, questions also of physics, dynamics and hydrostatics, rather than those of bacteriology; and is, therefore, pre-eminently a clinical question. If on its many sides, it has a bacteriological facet, it has yet to be discovered. It is a disease from which every one is bound to suffer, in greater or less degree, provided he live long enough, and yet, strictly speaking, it is not a disease of old age. The effect of old age in the etiology of arteriosclerosis may be illustrated by the popular saying with reference to this or that individual: "give him rope enough and he will hang himself," the only difference lying in the fact that with regard to the disease in question, the analogous saying is applicable to all: give him time enough and he will develop arteriosclerosis. And yet, I repeat, old age is not, *per se*, a cause of arteriosclerosis, as is proved by the observations of octogenarians and even centenarians whose arteries were perfectly healthy. A case in point is that of Mme. Robineau described by Metchnikoff in his recent work on the prolongation of life. At the age of 105

[1] Read, by invitation, at the Ninth Annual Meeting of the American Therapeutic Society.

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she "had retained her intelligence fully, her mind remained delicate and refined, and the goodness of her heart was touching . . . . . The most remarkable circumstance was the absence of sclerosis of the arteries."

I have, at present, under my care, a lady in her ninetieth year, whose mental faculties, including memory, are in perfect preservation and whose palpable arteries show no signs of sclerosis. The absence of sclerosis of cerebral vessels may be inferred, with considerable certainty, from the state of the mental faculties. The man, who, at the age of seventy-eight, writes brilliant novels and beautiful poems, may possibly have sclerosis of his radials, but it is practically certain that there is nothing the matter with the arteries of his brain.

Another proof that age is not a true etiological factor is afforded by the fact that advanced arteriosclerosis has been observed in children and even in the newborn. The rôle of age in the production of arteriosclerosis may be compared to that of one who is *particeps criminis*. It not only does not interfere with the nefarious work of microbes and toxines, but gives them the opportunity for its accomplishment.

Among the generally accepted causes of arteriosclerosis are the following: prolonged physical exertion, intestinal toxines, lead, alcohol, tobacco, perhaps also tea and coffee, the infectious diseases, especially syphilis, and those diathetic diseases included by the French under the term "arthritisme," viz., obesity, gout, lipogenic diabetes and lithiasis. As will be seen later when I come to discuss the question of treatment, the data furnished by the experimental pathologist are far from satisfactory.

The etiological relationship of arterial hypertension to arteriosclerosis is a subject which must, of necessity, be carefully considered by every student of the disease. There is much to be said in favor of the theory that the various substances which I have mentioned as generally accepted causes of arteriosclerosis, produce the disease through the agency of the hypertension to which they give rise. One of the most important arguments in favor of this theory is derived from the well known action of adrenalin. (1) This substance is the most powerful vasoconstrictor of which we have knowledge and arteriosclerosis may be readily induced by its injection into the veins of an animal. (2) In a large percentage of cases of arteriosclerosis the adrenals have been found hypertrophied post-mortem.[2] (3) The removal of the thyroid and the suppression of the functions of the ovaries, both of these organs being hypotensive, are followed by arteriosclerosis, which is also seen, sometimes at an early age, in cases of myxœdema. Facts such as these have satisfied some of the most competent observers that hypertension is an essential cause of arteriosclerosis.

Sajous adopts, in modified form, the theory of hypertension. He holds that arteriosclerosis is primarily due to the presence of endogenous or exogenous poisons in the blood, but does not believe that these poisons act directly upon

[2] In one-third of 386 autopsies upon arteriosclerotic subjects, Boinet found the adrenals hypertrophied. (Quoted from Gouget. L'artériosclérose et son Traitement. Paris, 1907.)

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the vascular walls. They stimulate the adrenal system to a production of "adrenoxidase" in excess of the amount of this substance necessary to destroy the said poisons. This surplusage of adrenoxidase expends its action upon the cells of the vascular walls, which it stimulates to "abnormal metabolic activity." This stimulation is most effective and most disastrous in the minute vasa vasorum, the lumina of which become obliterated and, in consequence, the large vessels are imperfectly nourished and undergo sclerotic and calcareous changes.[3]

It seems evident from the above that, in the opinion of Sajous, the secretion of the adrenals does not produce arteriosclerosis solely through the hypertension which it induces, but that its action may also be fairly styled toxic. This view is confirmed by the very recent researches of Waterman which were published in the last February number of Virchow's Archiv.[4] As the result of his experiments and pathological studies, Waterman concludes that adrenaline produces arteriosclerosis rather through its toxic influence than through its elevation of blood-pressure. This conclusion is based upon the facts that the vascular change appears after five or six injections, *i. e.*, in too short a time for hypertension to produce it, and that arteriosclerosis follows the administration of adrenaline when its hypertensive action upon the blood vessels is neutralized by the simultaneous injection of amylnitrite. Waterman has proved, by experiment, that these two substances are such perfect antagonists that when they are both administered subcutaneously the blood-pressure is not materially altered. Until these experiments of Waterman are refuted, it cannot be maintained that adrenaline produces arteriosclerosis through the medium of increased arterial tension.

There are numerous other acts on record which render the question of the etiological relationship between hypertension and arteriosclerosis still more ambiguous. For example: Josué, in a recent article,[5] discusses the question of blood-pressure in arteriosclerosis and refers to Huchard and von Basch, one of whom (Huchard) describes a presclerotic stage characterized by hypertension due to chronic vascular spasm which ultimately leads to sclerotic vascular changes. This is the latent arteriosclerosis of von Basch. On the other hand, Dunin found hypertension in but 79 per cent. of the cases which he examined and Sawada in only 12.3 per cent. Such contradictory observations led to the theory that hypertension, in cases of arteriosclerosis, is the result of concomitant atrophic nephritis, which is upheld by Romberg. Cases, however, have been reported in which arteriosclerosis has been accompanied with hypertension but not with renal disease. According to Theodore Janeway, "arteriosclerosis leads to a hypertrophy of the left ventricle" (through the medium of hypertension) "only when the splanchnic arteries, or the aorta above the diaphragm, are highly diseased. The arteriosclerosis of the remaining vascular districts does not appear to exert this influence."[6]

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[3] Sajous. "The Internal Secretions," Vol. II, p. 1548 and '49.

[4] Einige Bemerkungen zur Frage Artériosclérose nach Adrenalin-Injection. Virchow's Archiv. Band 191, Heft 2, (1908) p. 202.

[5] La Presse Médicale, 23 Oct. 1907.

[6] The Clinical Study of Blood-Pressure. 1904, p. 143.

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From the foregoing it is manifest that whatever may be the cause of hypertension, it is not invariably present in cardio-vascular disease. The assumption that such is the case might lead to grave therapeutic errors. Josué sums up the situation by the statement that while the absence of hypertension does not exclude arteriosclerosis, its presence is a valuable corroborative sign of the disease.

The above etiological résumé has seemed to me an indispensable introduction to the consideration of the subject proper of my paper, the therapeutics of cardio-vascular disease.

The *treatment* of arteriosclerosis is prophylactic and symptomatic. It is highly probable that by a careful observance of the rules of hygiene and the avoidance of such aliments and poisons as are known by clinical experience and animal experiment to be concerned, directly or indirectly, in the production of cardio-vascular disease, its onset may be indefinitely postponed. On the other hand, it is certain that we have at our command therapeutic agents through which we can mitigate or completely relieve the most distressing symptoms and perhaps avert the gravest accidents. The most optimistic therapeutist does not claim to be able to restore a sclerotic, still less an atheromatous, vessel to its original condition, but it is the opinion of the most conservative that the disease may be retarded or even arrested.

Hygienic and Dietetic Treatment. It is almost superfluous to say that over-exertion, whether physical or mental, should be avoided by the patient with arteriosclerosis. With reference to kind and degree of exercise cases have to be separately studied. Strenuous physical exercise is to be absolutely prohibited in cases in which the heart is involved, whether such involvement be indicated by physical signs, such as dilatation or hypertrophy, with or without murmurs, or by the mere symptoms of cardiac insufficiency, such as dyspnœa on moderate exertion and a tendency to pulmonary congestion. It may be laid down as a rule, that in all cases of persistent hypertension physical exertion should be limited to walking on the level. The amount of pedestrian exercise should be regulated by its effect upon the blood-pressure. As is well known, the effect of exercise sufficient to produce a glow of warmth upon the surface of the body and moderate perspiration, is to lower the blood-pressure. In cases of arteriosclerosis of cerebral vessels, mental work must be suspended. Cramer lays stress up a triad of symptoms,[7] indicative of arteriosclerosis of cerebral vessels, which is composed of headache, vertigo and loss of memory. These symptoms are followed by psychical disturbances which vary in individual cases in accordance with the natural disposition, tending to depression in some, to exaltation in others, and are eventually succeeded by paralysis of the extremities, or of the muscles concerned in articulation, or those which move the eye or those supplied by the facial nerve. The paralytic attacks may be slight and fugitive as I, myself, have observed in several cases, or may approach, in severity, those caused by rupture of a cerebral vessel. Epileptiform convulsions obviously dependent upon cerebral arteriosclerosis, have also been observed.

[7] Deutsche med. Wochenschrift, Nov. 21, 1907.

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My experience, while it is in accord with that of Cramer as to the diagnostic and prognostic importance of the triad of symptoms above mentioned, does not enable me to state positively whether they are more frequent in those whose occupation is chiefly mental. I have seen them in the overworked clergyman of advancing years, who was straining every nerve to keep up his reputation as a brilliant preacher, and I have seen them also in the careworn and overworked housewife. In either case they constitute an imperative demand for a prolonged period of rest both of mind and body.

Symptoms of much less gravity than those above mentioned have been recently described by Josué,[8] as indicative of vascular changes in the cerebral vessels. One of the earliest of these premonitory symptoms is a progressive inaptitude for mental work and unusual lassitude after its accomplishment, an almost invincible distaste for anything involving continuous mental application and sometimes an actual disability for continuous reading. To this last symptom Josué has applied the appropriate term "dyslexia." In addition the patient may become irritable and emotional and be painfully conscious of the fact that he is gradually growing less competent to conduct the affairs of his business or profession. Such symptoms may be ascribed to neurasthenia and this diagnosis, as far as it goes, is correct, but as Josué has pointed out, neurasthenia developing late in life in individuals of previously stable nervous equilibrium, may have a physical basis in sclerosis of the cerebral arteries. In such cases as these, as well as in those described by Cramer, rest and change of scene are the chief therapeutic agents.

This statement as to the importance of rest and change of scene is made on the assumption that the patient's dietetic methods are correct. In the great majority of cases the very reverse is the case. In fact, in my opinion, endogenous poisons, the products of faulty digestion, are prominent factors in the etiology of arteriosclerosis.

The data furnished by the experimental pathologists, with reference to dietetics, are not altogether satisfactory, as they themselves admit. For example, Maurice Loeper[9] declines to draw any conclusions from an experiment in which he produced arteriosclerosis by an exclusive meat diet. This is because the animal employed in the experiment was a rabbit, a strictly herbivorous animal. It has undoubtedly been established that arteriosclerosis can be experimentally produced by substances which are abundantly present in an ordinary every day diet. Among such substances are phosphoric acid which is found in the ash of meat to the extent of 15 per cent.,[10] lactic acid, oxalic acid and citric acid. Such facts demonstrate conclusively that it would be practically impossible to exclude from the diet of man all articles of food which contain substances capable of producing vascular disease when given unmixed to a rabbit or other animal of the laboratory. In this connection, it is gratifying to note the common sense observation of Loeper who has produced well marked

[8] La Presse Médicale, 23 Oct. 1907.

[9] Archives des Maladies du coeur, des vaisseaux et du sang, No. I, Jan. 1908.

[10] Loeper, *Loc. cit.*

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atheroma with acetate of theobromine. No one, he says, would, on that account, dream of prohibiting the use of chocolate of which theobromine is one of the chief constituents.

A remarkable negative result of these experiments upon the lower animals is the frequent failure to produce vascular disease by the use of alcohol. Loeper's experiments with this substance were uniformly negative and so, he says, were those of many others whom he quotes. This is in direct contradiction of popular medical opinion and, I believe also, of clinical experience. The frequent association of cirrhosis of the liver with arteriosclerosis is presumptive evidence that the latter is due to what is universally accepted as the cause of the former, alcohol. The negative results of experiments on animals with this substance warrant our regarding as inconclusive, so far as man is concerned, the positive results obtained with others.

The conclusions derived from the experiments above alluded to amount to what is practically a *reductio ad absurdum*. In other words, in excluding from the diet of man those substances which have been proved to be causes of vascular disease in the rabbit, viz., phosphoric, lactic and oxalic acids, theobromine, etc., we must, at the same time, exclude those alimentary substances which the universal experience of mankind has proved to be the most nutritious.

Nevertheless, the question of diet is undoubtedly the most important in the treatment of arteriosclerosis, although it is one concerning which there are divergent opinions. All are agreed, however, that such substances as excite the heart and increase the arterial tension should be entirely avoided or reduced to a minimum. Chief among these are alcohol, coffee, tea and tobacco. The reptilian habit of concentrating the daily nourishment in one enormous meal, a habit on which some individuals pride themselves as though it were the acme of scientific dietetics, is to be emphatically condemned. Such a gargantuan repast is followed by hours of arterial hypertension, which might be avoided by consuming it in sections, so to speak, and at appropriate intervals. Notwithstanding von Noorden's [11] opinion to the contrary, the writer is in favor of a diet that is largely vegetarian.

The recent researches of Schlesinger and Neumann, [12] upon the digestive functions of thirty healthy individuals over sixty years of age have demonstrated that while fat and starch are thoroughly digested, as well in fact as in the young, the digestion of meat is, as a rule, difficult and imperfect. This is in remarkable analogy with the fact that most individuals as they advance in life restrict their daily consumption of animal food with distinct advantage to their physical condition. The morning meal of the arteriosclerotic should consist of some cereal food with a glass of milk or a cup of *café au lait*, or better still of one of the numerous well known substitutes for coffee, and a slice or two of bread and butter. This may sound like very short commons for the man addicted to the morning chop or steak, but it is abundant nourishment, *experto crede*, for the healthiest and most robust individual.

[11] Med. Klinik. 5 Jan., 1908.

[12] Wiener klin. Wochenschrift, March 5, 1908.

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Without entering into further details, for each case has to be separately studied from the dietetic standpoint, suffice it to say that three light meals a day are all sufficient and that a half pound of meat and a pint of milk will supply the requisite amount of animal food. Above all things, it is important that the food be triturated by the teeth to the last degree of subdivision and be thoroughly mingled with the saliva. The remarkable results produced by the thorough insalivation of the food, as advocated by Fletcher, seem to prove that the first stage of digestion, that which takes place in the mouth, is almost, if not quite, as important as that which occurs in the stomach and intestine.

I am thoroughly in accord with von Noorden in his condemnation of an absolute milk diet. The large amount of fluid which it necessitates, produces the very conditions which we are endeavoring to avoid or suppress, arterial hypertension and cardiac embarassment. As lime salts are frequently found in atheromatous arteries, it has been advised to limit the supply of such substances as contain lime. From this standpoint, milk should be forbidden. The fear of introducing lime into the system is, however, chimerical for this substance, as pointed out by von Noorden, is not deposited in the arteries until they are extensively diseased. The analogy between the deposit of lime in the vascular structures and that of sodium urate in a gouty joint is complete, for in each case a certain degree of necrobiosis is believed to precede the deposit.

Balneotherapy.—Diverse opinions are expressed by the most competent authorities concerning the effects of baths in cardio-vascular disease. Cold baths elevate the arterial pressure and so suddenly that, in many cases, they are undoubtedly dangerous. The same is true of hot water baths (100° F. and upwards) and of hot air and vapor baths. I have seen the most alarming symptoms produced by the Turkish bath in a case of arteriosclerosis in which the heart, while free from valvular defect, was undoubtedly the seat of mural degeneration. The brusque action of the douche is also to be avoided. The safest and most beneficial is the warm bath (from 95° to 98° F.) either plain or medicated with sodium or calcium chloride. According to Dr. Philip King Brown, of San Francisco, who has recently studied the effects of baths on blood-pressure, the full strength, effervescent Nauheim bath invariably raises the arterial pressure, the hypertension lasting for about four hours, when the bath is taken during the day. If the bath is administered at night (11 P.M.) the pressure on the following morning is higher than normal, and has presumably been elevated during the hours of sleep.

Massage is a measure that may be resorted to with distinct advantage, and the same is true of electricity in its various modes of application. In cases of intermittent claudication, Erb recommends galvanic foot-baths, each foot being immersed in warm salt water in which the poles of a galvanic battery are placed.

Medicinal Treatment.—This may be divided into the treatment of arterio-sclerosis as a whole, including the arterial hypertension which so frequently accompanies it, and that of its local manifestations. For the former purpose the preparations of iodine are almost invariably selected. The traditional belief in the efficacy of these drugs is doubtless partly due to the association of the idea of syphilis with arteriosclerosis. The effects of syphilis, and vascular disease is

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often one of them, are not necessarily overcome by anti-syphilitic treatment. The most conspicuous example of this fact is found in tabes dorsalis which is not materially benefited either by mercurials or potassium iodide. Strümpell,[12] in an admirable paper, has recently suggested an explanation of the failure of antisyphilitic treatment in cases of undoubted syphilitic origin and especially in diseases of the spinal cord and the vascular system. He draws a therapeutic distinction between lesions due to the direct action of the spirochœta of Schaudinn, such as the gummatous processes, in which this organism may be readily detected, and those in which it is absent, such as tabes dorsalis and progressive paralysis. He attributes the latter, which he styles metasyphilitic processes, to the action of the toxine of syphilis, and compares them to the diphtheritic paralyses which are undoubtedly toxic. The most important distinction, however, between the syphilitic and the metasyphilitic lesions is, as above intimated, the therapeutic, the one responding promptly to appropriate treatment, while the response of the other is feeble or negative.

Nevertheless, clinical experience speaks strongly in favor of the persevering employment of the preparations of iodine in cases of arteriosclerosis. We see the beneficial effects of such a treatment most distinctly in sclerosis of the cerebral vessels, whether it manifest itself by symptoms that may be accurately described as neurasthenic, or by the graver triad, headache, vertigo and loss of memory, upon which Cramer lays so much stress. It is also a well known clinical fact that in sclerosis of the aortic valves and the neighboring portions of the aorta and myocardium, attended with pain, more or less continuous but hardly acute enough to be called angina, the effect of potassium iodide is often markedly palliative.

The iodide of potassium or sodium may be given in small doses (gr. v, *ter in die*) gradually increasing the dose to twenty, thirty, forty or even sixty grains *per diem*. Benefit from such medication may not be obtained until after many months of its employment. The drug may be given in courses of six weeks, with intervals of a week or two interposed, for a year or longer, and in many cases with decided benefit.

When, as is so frequently the case in arteriosclerosis, the kidneys are extensively diseased, the iodine preparations must be used with great circumspection. They are excreted both by the kidneys and the glands of the digestive system. When the kidneys are incompetent, the drug accumulates in the system and the labor of its excretion devolves more or less completely upon the digestive system which, in consequence, is almost sure to become disordered. When, from kidney disease, or other cause, the appetite fails and digestive disturbances ensue, a change may sometimes be made with benefit to sajodine or iodipine, both of which contain a much smaller percentage of iodine than either the iodide of sodium or potassium.

Lancereaux and Paulesco have reported excellent results from the use of iodothyrine, claiming that it not only diminishes arterial tension but actually lessens the rigidity of palpable arteries. The employment of this drug, as well

[12] Deutsche med. Wochenschrift, 21 Nov., 1907.

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as that of the uncombined thyroid extract, is certainly rational, for, as is well known, the removal of the thyroid gland is followed, not only by increased viscosity of the blood, but also by arteriosclerosis.

Experiments upon animals with the various preparations of iodine are contradictory to such an extent as to be practically useless as therapeutic guides. For example, it was apparently proved by one observer, v. Koranyi, that iodipine, an oily preparation of iodine, when administered subcutaneously with adrenaline, would prevent the development of arteriosclerosis, which invariably results from the administration of adrenaline alone. Later experiments have demonstrated that the same preventive effect may be obtained with oil uncombined with iodine.

Several years ago (1901) Trunecek introduced what is known as the serum treatment of arteriosclerosis. The "serum" in question is composed of a solution of the various alkaline salts that are found in the serum of the blood, viz., sodium chloride, sodium and potassium sulphates, sodium carbonate and sodium phosphate, and in the same proportions, but ten times stronger. Of this serum, two cubic centimeters are injected subcutaneously two or three times a week, and the dose is gradually increased up to five or even ten cubic centimeters. It has been claimed that under the use of this serum cerebral symptoms of arteriosclerosis, such as vertigo, tinnitus, insomnia, etc., are rapidly ameliorated. Trunecek employed this serum on the theory that the blood was deficient in the alkaline salts which not only keep the earthy phosphates in solution but also exert a regulative action upon the amount of water in the blood. A tablet containing the alkaline salts in the same proportions in which they exist in the artificial serum has been administered by the mouth and, it is claimed, with good results. As Professor Gouget remarks, in his excellent treatise [14] on arteriosclerosis, the favor with which Trunecek's serum was at first received, has not been maintained.

Symptomatic Treatment.—In cardio-vascular disease the resources of symptomatic treatment are best displayed in cases of angina pectoris. Such cases, therefore, are selected as types to illustrate the method of treatment in local disorders, no matter where situated, dependent upon arteriosclerosis. In all such affections there is an element of spasm which may be promptly overcome by each member of a group of remedies known as the nitrites. The chief of these are the nitrite of amyl, the nitrite of sodium, and nitroglycerine, known also by the names of trinitrine and glonoine. In the milder attacks of angina relief may be promptly obtained by the inhalation of amylnitrite or by the hypodermic injection of nitroglycerine. The nitrite of sodium is administered *per os* and is therefore slower in its action. In the severer forms of angina, however, nothing but the hypodermic administration of morphia, always in association with atropine, will suffice to relieve the excruciating pain. The use of morphia should not be delayed, for the pain, in itself, may be fatal. As Gouget remarks, when the patient dies during an attack of angina, it is not because of the morphia injected but in spite of it. In making this remark,

[14] L'artériosclérose et son Traitement. Paris, 1907.

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he took it for granted, as I do, that he was addressing physicians thoroughly acquainted with the limits within which this valuable drug may be safely employed.

To return to the nitrites:—Their effect is evanescent, but of the three I have mentioned the action of nitroglycerine is the most permanent. It should not, however, be employed continuously, for the system becomes accustomed to its use and the dose must be steadily increased in order to maintain its hypotensive effect. This cannot be done without inducing disorder, especially of the nervous system. By accustoming the system to the action of the nitrites, we deprive ourselves of valuable therapeutic assistance in grave emergencies. The action of the nitrites has been recently studied by Vaquez [15] who is of the opinion that the only one of them which may be employed continuously with advantage is the sweet spirit of nitre. This well known and time-honored remedy may be given in doses of from two to four grammes daily for an indefinite period. It exerts a sedative effect upon the arterial circulation without interfering with the emergency action, so to speak, of the more powerful vasodilator remedies.

In addition to the nitrites, the theobromine preparations, strongly recommended by von Noorden in stenocardiac attacks, are well worthy of a trial. The best known of these is diuretin, which may be given in doses of 0.5 to 0.6 thrice daily. It is a vasodilator and has been found decidedly useful, not only in attacks induced by nicotine poisoning and in pure neurasthenic attacks, but also in those due to sclerosis of the coronary arteries. Von Noorden advises that it be replaced by agurin in cases complicated with renal disease, in order to avoid the irritating effect of the salicyl component of diuretin.

I have derived signal success, in cases of angina, from a remedy of which practically no mention is made by writers upon this disease. I refer to aconite. Under the use of two-or three-drop doses of the tincture I have seen marked mitigation both of the frequency and the severity of the paroxysms. It is not, like morphia, nitrite of amyl, and nitroglycerine, an emergency remedy, but for long continued use I have found it more valuable than any other drug and can recommend it with entire confidence. It may be given most advantageously in association with the sweet spirit of nitre.

Chloroform should never be employed in cases of angina, either for the relief of pain or for the production of anæsthesia in case of absolutely necessary surgical operation.

I consider it superfluous to speak of the indications for the employment of digitalis in its various forms, and the succedanea of that invaluable drug. They are the same as those of failing compensation in general. The experience of all present will, I think, support my statement that digitalis is much less effective in the sclerotic forms of myocarditis than in the more distinctly valvular forms of heart disease. This is because of the greater involvement of the myocardium in the former affections. As I have said else-

[15] Archives des Maladies du coeur, des vaisseaux et du sang, No. I, Jan. 1908.

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where: "The first requisite for the successful employment of digitalis is the presence of more or less healthy muscular fibre."[16]

There is one localization of sclerotic myocarditis which absolutely contraindicates the employment of digitalis. This is the involvement of the muscular bundle of His which is the physical basis of the clinical syndrome known as Stokes-Adam's disease or heart-block. In this, the most interesting of the manifestations of cardio-vascular disease, digitalis is useless and may be injurious. Atropine and nitroglycerine are the drugs from which most benefit has been derived in cases of heart-block.

It is impossible, within the limits of this paper, to enumerate the local affections which may be treated successfully, from the symptomatic standpoint, in accordance with the methods employed in stenocardia. I shall, therefore, conclude with a reference to that manifestation of arteriosclerosis in the lower extremities which has been styled angina cruris but which is better known by the name of intermittent claudication. In this interesting affection, of which the chief symptom is painful muscular spasm induced by locomotion, and which is apt to terminate in gangrene, the most prominent indications are rest in bed, warmth to the extremities and Bier's light ligature method of inducing passive congestion. The prevalence of this affection among Russian Jews has been commented upon in a recent article by Dr. F. Parkes Weber, of London.[17] The same observer has derived success from the employment of local hot air baths and iodipine. He has also employed Merck's fibrolysin hypodermically.

That there is an element of vasomotor spasm in these cases is shown by the fact that gangrene is often longest delayed in the cases in which the symptoms of intermittent claudication are most pronounced. This is in analogy with the fact observed in cases of angina pectoris. The greatest sufferers from that disease are not always the soonest relieved by death.

THE ESSENCE OF THE REST CURE.

By J. MADISON TAYLOR, A.B., M.D.
PHILADELPHIA.

Systematic therapeutics aims to achieve ultimate perfectibility. It is only rarely that physicians are permitted to do their uttermost for those who seek their counsel. If patients, or those who are in authority over them, were always far-seeing or wise fewer failures would be charged to physicians and far less sorrow and disappointment fall on the sufferers. On the ground of economy alone it is much better to permit freedom of action and fullness of domination to the medical counsellor, whereby he may carry his remedial procedures to a legitimate fruition.

[16] Digitalis in Valvular Disease of the Heart. Med. and Surg. Reporter. Nov. 22, 1890.

[17] *Lancet*, Jan. 18, 1908.

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Accuracy of diagnosis is a paramount requisite in dealing satisfactorily with any derangement, but it is pre-eminently necessary that the physician shall enjoy the privilege of adequate time and opportunity to study those complex problems involved in the psychoneuroses. In by far the largest proportion of those who have suffered from protracted ailments or illnesses there has arisen an involved mental state compounded of real and inferential maladies. The solution can only be reached by a nice degree of awareness in which psychology is on a par, or indeed above, the utmost scientific resources of pure medicine. Nowhere is the employment of systematic, deliberate, exact, and consistent therapeutics more needed than in these involved cases of protracted ailments. The subject is too often impatient, although it is natural to demand the most prompt and permanent cure. If the mind is fairly clear and the intelligence good, the physician can often proceed by leaps and bounds if he can secure frank, cordial co-operation. Wise advice in dealing with psychic phases is capable of eliminating half or a third of the distress in a single or a few conferences, provided there be receptivity and a sincere desire to obey. Since these ideal conditions are all too rare, the best we can ordinarily do is to set about securing a thorough mutual understanding and a compact to pursue to the uttermost recommendations as they shall evolve. The first desideratum, too often overlooked, is to indicate a plan of life calculated to place the body in a condition of increased receptivity to agencies designed to enhance and conserve the auto-protective forces. This is the *sine qua non* of economy.

This principle is plainly recognized in dealing with instances of acute disease accompanied by the conservative action of fever. Absolute rest is demanded not only here, but in the surgical domain in order to encourage repair by eliminating all sources of fatigue and strains, not only of body, but also of mind.

The physician is often confronted with conditions compounded of physical and mental exhaustion so severe as to thwart normal physiologic responses to remedial agencies. The problem then is to secure cellular stability and render it possible to so modify the overwhelming perturbations of vital rhythm, as to permit rational measures to stem the tide of destructive changes and definitely turn the inherent forces toward restoration.

The most efficacious means of securing this state of physiologic receptivity, both for psychic and physical cellular adjustment, is to place the sufferer at absolute rest, to seclude from all outside influences, family, mail, news, and the like. Under no circumstances should this be attempted in the patient's own home. Mere physical rest, moreover, is frequently not enough. Hence it was the privilege of Weir Mitchell to initiate and develop a systematic method of "robbing rest of its evils"; nay more, to so enhance its value by suitable co-efficients as to bring about permanent betterments. Rest is an obstacle to further improvement if continued beyond its useful period.

All successful men find imitators. Too often these, by omitting some essentials, fail to get equal results. The pioneer gains his special power by giving not only a higher degree of attention to the subject, but he learns also,

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by the evolutionary processes through which he passes, to avoid divers difficulties and to initiate new methods for utilizing inherent forces whereby he can overcome serious damagements.

It may be helpful to outline my personal concept of the essential points in this system of cure acquired by many years of experience as the personal assistant of the master.[1]

First of the contra-indications. By far the larger part of those psychoses so prevalent should receive judicious regulation of function, educative suggestion, followed by systematic motor education, especially in the lines of useful labors. It requires some acumen to differentiate the fictitious neurasthenic phenomena from constitutional or acquired enfeeblement.

Imperative irrepressible ideas, persistent or morbid questionings, doubts, the endless "whys and wherefores," apprehensions, the multitudinous phobias, mental agitation, diffused emotional disturbances, hallucinating manias, cloudy memory pictures, defective orientation, anomalies of sense perception, of character and action, vacillation, insistent perplexities, religious obsessions and the like psychesthenic phenomena, are better treated by educative suggestion, suitable occupation, and motor training. This is true even where these are complicated by functional derangements such as insomnia, anomalies of movement ("tics") of digestion, of lungs, and especially of heart and circulation, of genitalia; restlessness, exaggerated indolence, intermittent painful states, and the like.

Neurasthenia is described by many clinicians as a psychopathic condition characterized by (1) abnormal mental and physical fatigue; (2) impairment of the associative memory, and (3) sensory disturbance of psychic origin. The symptoms are liable to wide variation.

The abnormal fatigability leads to hypersensitiveness to all stimuli, emotional anomalies, paræsthesias, elementary hallucinations, inexact and partial; to irritability, distractibility, inability to fix or maintain attention. Hence follow despondencies and hypochondriacal ideas, and all largely influenced by external impressions. These are the conditions best controlled by full rest treatment; but when abnormal fatigability is present, no matter what the other phenomena, it may be best to employ rest for a time. There is thereby afforded opportunity for deliberate observation and accurate diagnosis, to form opinions as to the length and completeness of treatment, and the special needs of each.

These puzzling conglomerations of psychosis, psychesthenia, hysteria, neurasthenia, etc., are calculated to confound even the elect. Given time, opportunity and moderate control, they can and should be practically differentiated; they must be, to deal satisfactorily with them. In my earlier years of experience in this field exact knowledge was not on record. Those of us who were privileged to treat a large number of such cases were compelled to work out our own salvation. Such a master as Weir Mitchell was fully aware of the nicest shades of difference, and adapted his measures with unerring skill;

[1] My views are set forth at some length in an article entitled "The Conduct of Rest Treatment," published in the International Clinics (Vol. II, 13th series, 1903.)

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and it was a liberal education to observe his conclusions evolve, his measures, especially his personal domination adjust itself to the often kaleidoscopic fluctuations. Those who, like Paul Dubois, would accuse him of omitting some one or another measure, conception or principle of action, which, considered from their personal viewpoint, is paramount, could only misjudge him from his writings, which are all too scanty.

The central point of the rest treatment is dominant, educative suggestion, "moral orthopedia" (Dubois), a wise training of the patient whose salient characteristic is maladaptation between his own consciousness and environment; impairments in powers of right thinking, willing feeling, doing.

Not all cases of psychesthenia need rest treatment, but isolation, like "moving the previous question," cuts off debate, places the individual in the first stage of hypnosis, which, by eliminating the life of customary relationships, enhances receptivity not only of mind but of body.

By absolute rest, isolation,[3] forced and regulated feeding, we can best plow and harrow the ground, enrich the soil, and then proceed to sow the seeds of right thinking, feeling, willing and acting. This is the key to the situation: to place the psychically entangled individual, whose central defect is weakness, in the best possible attitude for educative suggestion and bodily repair. Time, abundant time, is required, with ample opportunity to slowly but surely conserve the budding growths of vigor and wholesome-mindedness. Who gets well the soonest and remains most permanently benefited? Always the most obedient, the most intelligent. When the dissociation or disintegration of personality, the psychic instability is corrected, the infinite changeability mitigated, the fundamental physiologic functions restored to a normal rhythm, we can then proceed to deal hopefully with the abnormal fatigability and other neurasthenic substrata. If the getting of a patient to bed is not easy, as often happens, the putting on the feet after some weeks is no light problem; that is, to do so safely and permanently. Here we may use as analogy the apt definition by Richard Croker. He says: "That man is an honest man who, when bought, will stay bought." To restore is only the beginning; to make and keep well and self-reliant is the real object.

Health is, among other good things, the state of equipoise between consciousness and environment. Where months or years have been passed in a disordered state of personality, it is something of an exploit to finally turn that individual at large upon society restored and in a right mind. It is more; it is an achievement to make sure of the ultimate results. The physician must then indeed be, and continue to be, the guide, philosopher, and prolonged friend.

Among the chief agencies of the after cure is motor education and persistence in right *doing*. Psychic right direction in the months and years to come is of more real importance than even the preliminary though radical

[3] Isolation means radical separation from home and family. No compromise here can be entertained or failure is assured. Any other house may serve, but at a distance is best.

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measures. Here shall the counsellor stand or fall, according to his judgment, his personality, his persistence.

Yet more than all does ultimate success depend on the inherent wisdom of the patient, his or her capacity to realize the need for good counsel long maintained.

Diet.—So well is the subject of dietetics ventilated at present, that it is only necessary here to remark that while nutrition is a most important factor in the treatment of exhaustion states, it is not so paramount as some have claimed. Where the patient is under-nourished, full feeding, even forced feeding, is indicated. Milk and eggs, especially the raw yolks of eggs, should be administered *between meals.* Where there is obstinate dyspepsia, or, as occasionally happens, overweight, or hyper-nutrition, a course of skim milk in lessening amounts after the method of Carrell, will prove of advantage to reduce flesh, relieve vascular tension, or cure many functional derangements. This consists of eight ounces of skim milk, sipped from a spoon, every three hours, each day lessening by one ounce, till only two are given, then increasing to the first amount and gradually adding some stewed fruit and bread, and in about three or four weeks getting back through a simplified to a more complex, and finally to a normal dietary. A period of complete starvation for a day or more is an excellent device to correct vitiated digestive states, gouty phenomena, hypochondriasis, or to restore lost appetite. While a person is at absolute rest many such radical measures can be employed more safely and successfully than for one who is up and about. Moreover, hyper-alimentation can then be pushed to an extraordinary degree.

As is well known through the aphorism of the old nurse "cod oil flesh is fleeting," so are rapidly stored cells subject to swift escape when activities are resumed. Hence the necessity of those rational auxiliary measures, massage and graduated forms of motor education not only to hold what is gained, but to render it available, useful, potential.

Electricity.—The routine use of faradism is of large utility, especially for those whose muscles are deranged in power or control. In hysterical paralysis or incapacity it is essential. If no such condition is present it may still prove of large utility through its sensory stimulation, as well as for its motor encouragement and compulsion. It is the one measure in the group of essentials which may, however, often be safely omitted.

The Nurse.—The most important factor, next to the wisdom and tact of the physician, is a suitable nurse. Not only must she qualify technically, but intellectually, and in that far higher sphere which is inexactly described as the realm of common sense, since it is one of the rarest of gifts. Her business is to maintain a symmetrical, consistent, daily routine, and keep the patient all the time busy "guessing," supplying just enough conversation, but not too much information or explanation. Patients often remark that the rest treatment was among the busiest periods of their lives. All this keeping busy is essential. The patient is, and should be, passive; in extreme cases absolutely so, all "doings" being performed by others. At first the nurse actually places food in the recipient's mouth. Conversation had best be of

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the simplest. Part, and not the least part, of the cure is the selection of the topics; the character of their pursuit is the duty of the nurse under hints supplied by the physician. I remember Dr. Mitchell once telling me a most significant incident. The patient was the daughter of a Catholic physician, who stipulated that the nurse should be a devout Romanist. Whereupon I was directed to install a pink-cheeked Presbyterian. Old lines of thought need to be firmly set aside and new points of view presented. Suggestive education is paramount. In this the nurse is the constant, if not the chief, agent.

Medicines.—A good clinician can be entrusted safely with the administration of needful drugs, and he is the more successful when working with such tools as he is familiar. Few are needed; this process rendering them relatively unnecessary.

In this connection it is well to refer to the suggestive summarization of the pathology of neurasthenia as presented by Sajous in the March CYCLOPÆDIA. Neurasthenia is recognized to be a vaso-motor neurosis, the prominent feature of which is relaxation of all arteries. This he explains as due mainly to exhaustion of the sympathetic center and the resulting relaxation and loss of propulsive power of the arterioles. The tissues thus become imperfectly oxygenized and nourished, hence follows the mental torpor, habitual fatigue, adynamia, gastro-intestinal atony. Various clinical classifications are suggested, describing varieties of functional disturbance; but whatever the multitudinous symptoms, certain features are common to all which depend on varying degrees of hypothyroidism. Hence he recommends small doses of desiccated thyroid (not more than 1 grain three times daily), and often in combination with small doses of strychnia and full amounts of an assimilable form of iron, such as the reliable Blaud's pill. Hence follows improved tone in, and nutritional power of, the blood. The thyroid preparation is assisted by the strychnia, which, by exciting the adrenal and vaso-motor centers, enhances general oxygenation and the vascular tone. The sympathetic center and muscular layers of the arterioles are also better nourished, hence they recover tone from another direction, a most important factor in systemic repair.

The rest treatment is capable of diverse useful forms of modification. Among these is "partial rest," consisting of such liberalizings as may be permissible. Always it is a process of education of primitive impulses whereby normality shall be re-established.

Massage, Passive and Active; Educational Movements.—The efficacy of massage is so great that it surprises me to hear the measure sometimes belittled. The reason, as I have pointed out (*New York Medical Journal*, February 8, 1907), is that few clinicians take the trouble to study the subject and hence are victimized by inferior operators who, failing to get adequate guidance and direction, produce valueless or even hurtful effects. Suffice it to say that while aiming to improve both psychic and physical conditions we have a powerful ally in judicious scientific methods of awakening the dormant kinesthetic centers by motor and sensory stimulation. It is most

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necessary in treating the victims of disuse or misuse of bodily and mental functions, to restore normality in the realm of both correct sensation and motion. Receptive centers have here become dormant, vitiated, or exhausted; the cortical sensory and motor centers need to be brought into normal relation with the rest of the controlling centers; hence of the whole field of consciousness. As Pershing says (*Journal of the American Medical Association,* May 11, 1907): "Having awakened some degree of normal sensibility, the cure (of hysterical paralysis, etc.) will be completed by exercises in voluntary motion. But preliminary to these any inhibitory fears must be overcome."

The sensations and ideas of motion are functions of the convolutions back of the Rolandic fissure. In normal volition these convolutions are first excited (by association impulses from other centers), and then directly or indirectly by association impulses which they arouse in corresponding motor centers in the precentral convolution.

Furthermore, above and beyond effects to be achieved by general massage and regulated (passive and active) movements, there is a vast field of potentiality in judicious nerve pressures, direct, distributed and alternated, whereby extraordinary effects can be wrought in regulating vaso-motor reflexes, hence on blood-distribution, etc. This last is rightly the province of the skilled physician and should be performed by him, or, at least, under his direct supervision.

The Therapeutics of Diseases Which Involve the Internal Secretions.

THE BIER HYPERAEMIA METHOD—HOW TO ENHANCE ITS CURATIVE EFFICIENCY.

By CHARLES E. de M. SAJOUS, M.D.
PHILADELPHIA.

The appearance of Willy Meyer and Schmieden's excellent manual on "Bier's Hyperæmic Treatment in Surgery, Medicine, and the Specialties,"[1] meets a general want, the English-reading members of the profession having had to content themselves, so far, with desultory articles. Although the precise mode of action of artificially produced "congestive hyperæmia" is still obscure, what is known affords additional evidence in support of the general principle that I have been urging for some years,[2] that we should look to the

[1] Bier's Hyperemic Treatment in Surgery, Medicine, and the Specialties. A Manual of Its Practical Application. By Willy Meyer, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital; and Victor Schmieden, Assistant to Professor Bier, University of Berlin. W. B. Saunders Company, 1908.

[2] Sajous "The Internal Secretions and the Principles of Medicines," Vol. I, 1903; Vol. II, 1907.

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auto-protective resources of the body as the foundation of a scientific therapeutics. Indeed, Meyer and Schmieden state that "to increase this beneficent inflammatory hyperæmia resulting from the fight of the living body against invasion is the aim of Bier's hyperæmic treatment." This applies as well to inflammation, for if Bier's teachings are sound, according to the same authors: "we shall have to part with a number of time-honored views, up to the present time accepted as pathologic truths." They hold, furthermore, that "hitherto it was considered the physician's first duty to fight every kind of inflammation, since inflammations were looked upon as detrimental," and urge that "Bier teaches just the opposite: namely, to artificially increase the redness, swelling, and heat, three of the four cardinal symptoms of acute inflammation." Finally, they emphasize the fact that "the same rule obtains here as is generally applied in the case of infectious disease. There are very few physicians to-day who would attempt to reduce the fever in such cases. We have learned to look upon this fever as one of the weapons of the organism in its fight against the intruder."

As is now well known, hyperæmia is induced in three ways: (1) By means of an elastic bandage or band which has for its purpose to retard the return of the blood to the heart by compressing the veins between the focus of inflammation and the heart, and suitable for diseases of the head, testicles, and extremities; (2) by means of cupping glasses of various sizes and shapes suitable for use upon the breast, back, spine, pelvis, and body surface, where there exists a localized infection, an open lesion such as a sinus, granulations, etc., and (3) by means of hot air, generated in wooden or metal boxes especially designed for the introduction of a limb, or application to a surface—the hips, back, etc.

The advantages of these various procedures that have been recorded by many investigators are numerous. By increasing the inflammatory activity in incipient infections, suppurative processes, phlegmons or furuncles, for example, these are aborted. If an incision is necessary, a small one suffices. It favors the absorption of exudates and morbid tissue elements, and thereby the process of repair. It is not only painless in application, but tends to relieve pain.

The field of its usefulness is very great, being alike valuable in surgery, medicine, and the various specialties. As to *surgery,* furuncles, carbuncles, abscesses, acute lymphadenitis, infected wounds and inflammatory processes, fistulæ, primary and metastatic parotitis, puerperal mastitis, arthrodial infections (gonorrhœal arthritis, for instance), perforative wounds of joints, felon and tendinous phlegmons (palmar abscesses, for example), acute and recurrent osteomyelitis, erysipelas, infected wounds (as sustained by physicians at autopsies), compound fractures, inflammatory flat-foot, scoliosis, varicose veins, gangrene and frost-bites represent those disorders in which experience has demonstrated the surpassing value of the Bier method. Closely related to the foregoing are the various manifestations of tuberculosis, osseous, glandular, tendinous, peritoneal, etc., and cold abscesses and fistula in ano, all of which are greatly benefited.

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Various other *general diseases*, such as chronic articular rheumatism, arthritis deformans and gout, acute articular rheumatism, cerebro-spinal meningitis, diphtheria, pulmonary tuberculosis, bone metastases following typhoid, lumbago and sea-sickness have also been found to yield more or less satisfactorily to the hyperæmia treatment, used in such a manner as to induce hyperæmia in the area which bears the brunt of the disease. It has also afforded excellent results in the various disorders classed under "specialties." This applies, in *gynæcology*, to chronic para- and perimetritis, parametritis posterior, and dysmenorrhœa; in *obstetrics*, to puerperal inflammation of the joints, puerperal mastitis, and deficient lactation; in *genito-urinary surgery*, to acute gonorrhœa and its complications, prostatitis, epididymitis, cavernitis, etc., gonorrhœal rheumatism, and to tuberculosis of the same organs; in *otology*, to otitis media, even with mastoiditis, though not in the chronic forms; in *ophthalmology*, to progressive optic atrophy, acute dacryocystitis, parenchymatous keratitis, sympathetic ophthalmia, blepharitis and conjunctivitis, and stye; in *rhinology and laryngology*, to acute coryza, acute disorders of the various sinuses, frontal, maxillary, etc., atrophic and hypertrophic rhinitis, acute, chronic, and hypertrophic tonsillitis; in *neurology* and *psychology*, to neuralgia, sciatica, tic douloureux, headache, chorea, epilepsy, irritability, melancholia, spinal meningitis, and poliomyelitis; and finally, in *dermatology*, acute eczema, acne, sycosis, psoriasis, mycosis of the nail, alopecia areata, and lupus.

Of course, the three methods by which hyperæmia may be produced are brought into play in these numerous disorders, and upon the technical skill with which each method is employed in a given case will depend the issue. The rules laid down by Willy Meyer and Schmieden in their excellent book furnish all the required information, and the reader is therefore referred to it as a guide.

So imposing an array of diseases in which any one line of treatment is indicated would tend to brand the hyperæmia method as a universal panacea. The authors urge that such is not the case. In their own words: "It is just a new and fascinating, but very powerful, therapeutic agent on a physical basis, an agent which has its indications and dosage, the same as any other remedy. We are only just beginning to appreciate its possibilities. Although it has been known for the last fifteen years as an efficient remedy in the treatment of tuberculous disease, its application in the treatment of acute infections is but of comparatively recent date; it is still on trial in every one of the branches of our science."

An important question suggests itself in this connection—a timely one while the Bier's method is still on trial: Might we not greatly enhance its curative efficiency by augmenting the bactericidal and antitoxic properties of the blood caused to accumulate in the diseased tissues by the "hyperæmic treatment"? That such is the case will now be shown.

(Continued in the July issue.)

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Editorials

BIER'S METHOD IN THE TREATMENT OF SOME NEUROSES.

THE therapeutic armamentarium in neurological practice is very meagre. Organic nervous diseases are incurable because of the complete destruction of the fine nervous elements, and because of the impossibility, in the majority of cases, of regeneration. Functional nervous diseases are very rebellious to treatment, because of a special and great susceptibility of the nervous system to dynamic derangements. In the latter case the struggle for the restoration of normal functions is sometimes insurmountable. Functional nervous disturbances in segments of limbs in spite of their apparently limited effect present not infrequently an uncontrollable condition interfering with daily occupations.

For all these reasons the therapeutics in nervous affections is the most unpromising, and consequently most discouraging. Any new appliance, drug, measure in this field of human afflictions should be welcomed and given a thorough trial. The results of Bier's method, based upon a temporary large blood-supply to the affected parts, have been so encouraging that a multitude of observers became enthusiastic about it; their experience has proven equally successful.

During the last eighteen months I endeavored to utilize Bier's discovery for some of the neuroses in which a local disturbance of blood-supply, perhaps, plays a certain rôle or in which an increase of blood may *a priori* be beneficial. A systematic study of 12 cases was undertaken by me, strict records were kept, the time of the beginning of improvement, its duration were watched; finally failures were also noticed. The cases selected for that purpose were as follows: 2 with writer's cramp, 2 with telegrapher's cramp, 1 with pianist's cramp, 2 with acroparæsthesia of the hands, 1 with erythromelalgia, 2 with tic of the neck, and 2 with brachial neuralgia.

The pathogenesis of all these affections is still debatable, but that the blood-supply may have something to do with their manifestations appeared to me plausible. For example, in cases of neuralgia, as I have shown from personal pathological investigations (*New York Medical Journal,* 1906), the blood-vessels play a certain rôle in the causation of a degenerative state of the peripheral nerves. My attempts, therefore, to treat certain neuroses with the new method were not based on pure empiricism, but on physiological reasons.

The results were highly satisfactory. Very good results were obtained in some cases, improvement in others, but there were also failures. No matter how mild the degree of improvement may be, if we are able to decrease or remove pain without removing totally the cause of the disease itself, the treatment certainly commands our attention.

ALFRED GORDON.*

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"AUDI ALTERAM PARTEM."[1]

I HAVE only words of praise for this thoughtful, stirring address. I gladly re-echo what Dr. Bond Stow says, so far as my imperfect pathological knowledge permits. While giving all due praise to this paper, while acknowledging the great importance of pathological findings to the laity, as a means of correcting imperfect knowledge and preventing further and future mistakes, I would venture to say just a word or two in behalf of the man who still thinks we must pay regard at times—often, indeed—to the relief of symptoms when our knowledge of pathological changes at present is, and possibly will be for a long time in the future, uncertain and unsatisfactory. How many times have I gone to post-mortem room and found, despite all available knowledge, literally nothing to account for pain, suffering, death! Again, how often have I seen pathological lesions, multiple, profound, and yet patient has lived many long years, and with scarcely a pain or an ache! Further, we must remember that many lesions may be present, which are pathological; yet we are not quite sure that they caused the symptoms from which the patient suffered. Finally, how many cases are investigated in post-mortem room and lesions discovered, and yet to what extent are they the cause, immediately, or, indeed approximately, of the death which has occurred? Some, indeed, are nothing more, in persons of a certain time and mode of life, than the expression of nature's growth or nature's decay. Don't let me be misunderstood. No one applauds science and advance more than I. On the other hand, the limitations of human vision to mere structural defects of pathological origin, *as cause of disease,* is misleading. These are not the sole cause, nor the great cause necessarily, of many ills from which human beings suffer. There is a very great deal still that is practically functional, from any point of view, that is to my mind, satisfactory.

Again, take the instances where *supposedly* (by reason of what we find in other cases more advanced, where death has occurred and a careful autopsy has been made by a trained man), certain pathological changes exist at a certain period during life. Can we prove their existence absolutely? Are they, can they, ever be susceptible of so-called pathological proof? There are beginnings of disease and it is these beginnings of disease, as a rule, we are called upon to treat, rationally, as far as may be. Are they always accompanied with visible, tactile, anatomical defects, which may be demonstrated and made clear to all who wish to see and to know really? Fortunately, for very many of human kind, medicine must always remain an art, and a very kindly and sympathetic art, and not a science. We must still prescribe for and relieve symptoms and we must do it, I believe, more or less empirically, in numerous instances.

I have been a follower for many years now of hospital wards and post-mortem rooms. I have tried, as far as may be, to glean available knowledge

[1] Remarks on a paper entitled: "The Correlation of Clinician, Pathologist and Laity," by Dr. Bond Stow, read before the Medical Society of the County of New York, March 23, 1908.

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from those most worthy to teach, and still I affirm boldly and confidently, that much can only be learned in private practice and from patients who do not die while we are caring for them; whose forms of disease do not lead to the autopsy table, and in whom and for whom pure pathology, or even bacteriological research, can avail but little in ameliorating their lot or promoting cure, it seems to me, of those who come on the stage later on. I am not aware as yet, except in a very few acute diseases, if any, even at the present time, and despite the march of science, that we have shortened their duration by a day's length by any system of doing. I am not aware of any chronic diseases that we really cure by medicine of any kind, *solely*. Surgery, it is true, does marvelous things in a few cases; but after all, in only a limited few, due regard being had for the innnumerable instances in which to-day she interferes at the cost later, it seems to me, when closely followed up, if possible, of ultimate good to the patients. Nature and nature's laws are hard to know, and seemingly more difficult as we strive further to learn and know, than previously. And finally we are compelled to fall back wisely and modestly upon the wisdom which has stood the test of long time and come to us not scientifically, but merely through repeated, consecrated watching of very many observers, who were true and honest.

One great difficulty in the way of pure science ever getting the best that can be in therapeutic results, is the necessary ignorance, in part at least, of the personal factor in disease. And this from the standpoint of the practitioner, who knows and observes intelligently, is all important in achieving success, either to relieve symptoms or to cure. I could give a great number of instances to prove my statement, if time permitted.

Finally, I would urge the crying need of the aspiring, ambitious men of to-day, of those who follow men of like fibre who have gone before, *not* to ignore or forget them by thought or act. They, the old physicians, have frequently been "good and true men," and have accomplished not a little. Even that little, however, often came in great measure from those who preceded them on the stage. The elder Flint was preceded by Louis, and Louis by Laennec. Among the surgeons, Sands was preceded by Parker, Parker by Nelaton, Ferguson, Billroth, and a host of others, and so it goes. Pathology and the dead house, morbid anatomy and gross pathology and even microscopical researches, are not all new. Sappey, Lancereaux, and Virchow lived, and we follow after, and others shall follow us; and those, too, will have newer stains, newer processes, newer findings; but the old, or certainly much of it, will remain good and true for many a year, even if forsooth it ever dies. Hippocrates and Galen are not quite dead yet, I believe, in a way, for many of their ideas and counsels are still those of highest human wisdom.

These are some—a few of the reflections which have come to me after reading Dr. Bond Stow's most admirable paper. I might simply have seated myself, after saying, well and perfectly done. I have thought it worth while rather to write out a few things from a different standpoint. And this, let it be clearly, plainly, strongly felt and understood, is no gentle plea for quackery, for fraud, for charlatanism in any shape or manner. It is rather the plea for

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the cause of honest, observing physicians on the other side of the fence, who want some man to hold their end up a little and not leave these halls feeling that unless they almost live in laboratory or post-mortem room, there is no truth and usefulness available even to most painstaking and loyal servants of our great guild, when served with the eye single to honor and well-doing.

BEVERLEY ROBINSON.*

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Cyclopædia of Current Literature

ARTERIOSCLEROSIS, AGE IN ITS RELATION TO, AND DEATH FROM.

In a series of 2000 autopsies, 442 cases, or 22.1 per cent., showed more or less arteriosclerosis. It is three times as common in the male as in the female, and occurred no earlier in the colored race in this series. The average age of the cardio-renal group was nearly fifty-five. The average age of the cerebral group was nearly sixty. Fifty per cent. of the cases of cerebral hæmorrhage occurred in the fifth and sixth decades, and was three times as common in the male as in the female. All the cases of aneurism were in males. The average age of death was nearly forty-five. Death from gangrene and diabetes was incident to the last decades—the sixth and seventh; the average age nearly sixty-five. W. H. Smith (Boston Medical and Surgical Journal, May 7, 1908).

BRIGHT'S DISEASE AND ITS TREATMENT.

If Bright's disease is recognized early and proper treatment undertaken, it is curable. Early symptoms, no matter how light, must be regarded as serious. If the favorable time is allowed to pass, cure becomes more and more impossible, relief of distressing symptoms more and more difficult, and the fatal issue is only a question of time. Statistics are unreliable, because the patients are usually carried off by intercurrent diseases; damaged kidneys provide a favorable soil for almost any disease, and death follows, when with these organs sound the patient would pass smoothly through the attack.

The treatment of acute nephritis is first of all preventive. During an infectious disease and after the disease has run its course, the kidneys have to be watched and the urine has to be frequently examined. Pure water, vichy, milk, and buttermilk must be freely administered to flush the kidneys, and drugs that irritate them should be given with the greatest caution. Absolute rest in bed is the treatment after the disease has been established, no matter how mild the case. There is no drug known that exercises a beneficial influence upon the process. Thorough elimination by skin, bowels, lungs, and kidney, and rest to the organ are the indications. A flushing of the kidneys, freeing tubules and glomeruli from *débris,* is desirable. However, the œdema present and the state of the circulatory apparatus must guide the administration of the liquids. The tepid bath increases diuresis and effects a flushing of the kidneys. The

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bowels have to be kept freely open, sodium and zinc sulphocarbonate given; if diarrhœa is present betanaphthol or other antiseptics may be administered to prevent fermentation. For practical purposes it is sufficient to administer these antiseptics in doses large enough to make the stools odorless or to add bismuth and to continue to increase until salt is found white in the dejections.

If the nephritis is due to chilling of surface, the treatment ought to be commenced with a steam or hot air bath. Severe pain in the region of the kidneys demands hot fomentation or a Priesnitz bandage. If œdema is excessive and does not yield to the hygiene and dietetic treatment, the usual measures have to be taken—saline laxatives to produce watery stools—hot baths, hot packs, and hot-air baths. Of the diuretics only those that are not irritating ought to be administered; the tartrates and acetates of sodium and potassium, lemon juice, infusion of juniper berries, infusion of digitalis, and benzoate of sodium. During an acute attack all food must be withdrawn. Chloroform inhalations and hypodermic injections of morphine to stop spasm; venesection in suitable cases, and hot injections of normal salt solution may be tried—pilocarpine if the lungs are not seriously damaged.

The treatment of the chronic form does not materially differ, though rest and diet must be modified to conform to less vigorous demands. Otto Lerch (Medical Record, April 18, 1908).

CANCER, THYMUS TREATMENT OF.

The writer makes a second report on the method of treating cancer by thymus gland. His cases, with one exception, were in an advanced stage and inoperable. The following points were noted. With the exception of two or three patients, they showed temporary improvement, less pain, reduction in the growth, prompt improvement in the general condition. Several of the patients have died or will soon die. In many of the fatal cases there was no great loss in weight, no pallor and cachexia, no local increase in the tumor. Some of the cases showed marked improvement in general appearance, with no evidence of metastases. The deaths were attributed to progression of the cancer, to the effects of the thymus treatment, or to the effects of some substance liberated by the ingested thymus which was not eliminated. Probably no deaths were caused directly by the ingested thymus, but its continued use may have caused the development of an antibody of such toxicity, persistency, and quantity as to produce the condition which preceded death. The treatment consisted mainly in the use of the dried gland in the form of a powder, the usual dose being two drachms three times daily. F. Gwyer (Annals of Surgery, April, 1908).

DIABETES MELLITUS, EPILEPTIFORM ATTACKS IN.

Although some of the epileptiform attacks which occur in the course of diabetes are manifestly due to other associated conditions (uræmia, cerebral softening, meningitis, etc.), a certain proportion of them are unquestionably related directly to the diabetes itself and are the expression of some form of diabetic intoxication. Such attacks may similate closely the general convulsions of true epilepsy, or they may be distinctly Jacksonian in character and be limited to one side of the body or to certain groups of muscles. These localized convulsions are usually associated with transient paralysis of the affected muscles, aphasia, sensory disturbances,

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or other symptoms suggestive of a circumscribed brain lesion, and may thus lead to serious errors in diagnosis.

The convulsions may appear only during the terminal coma, or they may be repeated at frequent intervals for days or weeks before coma develops, or finally, they may cease with improvement of the diabetic symptoms.

The association of such epileptiform attacks with the signs of acid intoxication is by no means constant. In several of the cases it is certain that no such acidosis existed. It seems probable, therefore, that the cause of the convulsive attacks must be sought for in some other form of diabetic intoxication. L. A. Conner (Medical Record, May 16, 1908).

ECLAMPSIA, BLOOD-PRESSURE OBSERVATIONS IN.

The blood-pressure in eclampsia is high, and of diagnostic and prognostic importance. In spite of improvement in subjective symptoms and increase in the quantity of urine, the blood-pressure may remain high, in which case the prognosis is grave, and labor ought to be induced. The continuance of high blood-pressure during the puerperium warrants a grave prognosis as to complete recovery. G. S. C. Badger (Boston Medical and Surgical Journal, May 7, 1908).

EXOPHTHALMIC GOITER.

In a case of exophthalmic goiter observed by the author, patches of dark brown pigmentation were found over the entire body; in another case localized lipomatosis was a striking feature of the exophthalmic strumous tachycardia, as he prefers to call exophthalmic goiter. In other patients he has observed pigmentation similar to that of Addison's disease. The writer refers to Löwi's recent researches which demonstrated the existence of mutual relations between the organs with internal secretion, evidenced by pupillary phenomena. He thinks that these facts suggest the participation of the suprarenals in the syndrome of exophthalmic goiter, while the parathyroid glands have nothing to do with it. Von Schrötter (Medizinische Klinik, April 5, 1908; Journal of the American Medical Association, May 9, 1908).

[If Professor Von Schrötter were familiar with "Internal Secretions," he would know that over five years ago I pointed out that the secretion of the thyroid by exciting the adrenal center in the pituitary body sustained the functional efficiency of the adrenals, and that when, as in the sthenic stage of exophthalmic goiter, the thyroid secretion is inadequate to carry on this function, a condition akin to Addison's disease is produced including bronzing. —SAJOUS.]

EXOPHTHALMIC GOITER, PERSISTENCE OF THE THYMUS AND.

Among other arguments in favor of a connection between persistence of the thymus and exophthalmic goiter, the writer mentions that the affection was always unusually grave in the cases on record in which this coincidence was noted, particularly when removal of the goiter was followed by sudden death. Exophthalmic goiter is generally accepted as due to perverted functioning of the thyroid gland, but he suggests that the perversion of function may be the result of persistence of the thymus. The thymus may persist long enough to start the exophthalmic goiter and then atrophy, possibly under the influence of some intercurrent infection. Evidence is presented to show that the thymus

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alone is able to induce heart and vascular disturbances. In the author's cases of persisting thymus in exophthalmic goiter, the thymus had all the characteristics of the juvenile organ and was not a secondary hyperplasia. C. Hart (Münchener medizinische Wochenschrift, April 7, 1908; Journal of the American Medical Association, May 16, 1908).

FRACTURE-DISLOCATION OF SHOULDER.

Every dislocation of the shoulder associated with fracture of the upper extremity of the humerus is a grave injury, and is likely to result in serious impairment of function if not promptly treated. Every such injury should be subjected to x-ray examination for accuracy in diagnosis. Gentleness should characterize all manipulative efforts at reduction, and these should never be carried to the point of bruising or lacerating the tissues.

Excision should only be practiced when reduction by open arthrotomy has failed, or where there is extensive communication of the upper extremity of the humerus, or when, in fracture at the anatomical neck, the condition of the upper fragment does not justify a reasonable expectation of uniting. After reduction, the broken greater tuberosity should be nailed into position if the case is recent, and should be removed if it causes impairment of function in an old case.

Failing to reduce by manipulation, immediate arthrotomy with reduction of the dislocation, followed by appropriate treatment for the fracture, has given the best results, and is the ideal method of treatment. Rigid asepsis is essential in securing good results, and these operations should not be undertaken where this cannot be carried out. J. M. Mason (Annals of Surgery, May, 1908).

HYDRONEPHROSIS IN CHILDREN.

Bilateral congenital hydronephrosis is comparatively rare, occurring about one-third as frequently as the unilateral condition. In the case reported the hydronephrosis was caused by enormous hypertrophy of the bladder wall and valve-like structures in the ureters. There were no anomalous blood-vessels, no stones, and no acute inflammatory processes and no strictures in the urethra to account for the condition. Bloody urine is common in these cases, due to the pressure of accumulated fluid upon the calices and pyramids of the kidney. T. H. Coffin (Post-Graduate, May, 1908).

INTERNAL SECRETIONS, RELATIONS BETWEEN TESTICLES AND OTHER GLANDS WITH.

A series of experiments are reported by the writer on guinea-pigs and other laboratory animals to study the effect on other organs of bilateral resection of the vas deferens, bilateral castration, and similar operations. The hypophysis became hypertrophied in the castrated animals and also after resection of the vas. The suprarenal capsules, thyroid and parathyroid glands also showed unmistakable signs of increased secretory functioning to supplement the lacking or deficient functioning of the testicles. These glands apparently did not alter their structure, except that the thyroid showed a transient change in structure in the castrated animals. No modification of any kind was observed in the spleen in any instance. Barnabo (Policlinico, March [Surgical Section], 1908; Journal of the American Medical Association, May 2, 1908).

MASTOIDITIS.

Cases of acute mastoiditis should be regarded as seriously ill, placed in bed, given a brisk cathartic and diaphoretic

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and the diet limited to at least one-half. If there be present tenderness of the mastoid, redness and bulging of the inner, upper and posterior external auditory canal and adjacent membrana tympani, Wilde's internal incision should be promptly done. Regular irrigation with water, as hot as can be endured, should precede and follow the incision; and dry heat should be applied during the intervals of irrigation. An aseptic should be applied to the wound after each irrigation and a 50-per-cent. solution of argyrol on a cotton-tipped probe is convenient and useful. Thus managed, many cases of acute mastoiditis speedily recover. If they steadily grow worse, the mastoid must be promptly opened, all diseased tissues removed, and the wound dressed aseptically. A painful deaf ear merits quite as careful attention as a red, painful eye, or a painful stiff limb. Until this be accorded it we will continue to have crops of extensive destruction of mastoid bones, permanent loss of hearing, infection of lateral sinus, facial paralysis, subdural, cerebral and cerebellar abscess. Leartus Connor (Lancet-Clinic, March 14, 1908).

MEASLES, TREATMENT OF.

Stress is laid by the writer on hygienic measures, remarking that in hospitals and asylums, however, sometimes the most scrupulous hygiene does not seem able to reduce the mortality below a very high percentage. He disinfects the eyes systematically with a hot boric acid solution three times a day at first, and with silver nitrate in case the conjunctivitis appears severe, using one or two drops of a 1-per-cent. solution. The nose, mouth, and vulva must be examined and kept disinfected, and convalescents must not be allowed to go out until the throat and skin are entirely normal, generally not under twenty-one days. Glandular lesions frequently develop in children allowed to be out too early, even in summer. The children are liable to lose several pounds and not regain them under two or three months. Of all the complications of measles, broncho-pneumonia is most to be dreaded on account of its frequent recurrence, its prolonged convalescence, and the debility. It should be suspected by the fourth day after the eruption if the temperature remains high. J. Hallé (Presse médicale, April 4, 1908).

NITRITES, THERAPEUTIC ACTION OF.

The experimental and clinical experience of the writer with amyl and sodium nitrite, spirits of glyceryl trinitrate and other nitrous compounds, teaches, he thinks, that in order to obtain the desired benefit from administration of the nitrites they must be given before the system regulating the blood-pressure has had opportunity to adapt conditions to counteract the modifications induced by the drug. The action is more inconstant the later it is manifested and it is inevitably transient. These drugs can tide the patient past some critical period, but they have no permanent influence on habitual hypertension. They should not be used systematically for this purpose, one argument against it being that they would thus lose their power when needed at a critical moment. Spirit of nitrous ether is the only one of the group to which the above does not apply; this drug is more of a general sedative for the circulatory system than a reducer of tension, and it does not contra-indicate the use of the other preparations at need. The writer advocates it in the doses of from 2 to 4 grams (30 to 60 grains) a day, in divided doses, kept up for a

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long time. But when occasional prompt action is necessary the organic nitrites must be called on, and he enumerates the reasons which have made him reject all but nitroglycerin. This he regards as the one remedy for angina pectoris and paroxysmal œdematous dyspnœa in persons with arterial hypertension. He has it put up in vials containing a single dose, five drops, of the official alcoholic solution, to be diluted with water and taken at the onset of the attack. Its prolonged use will neither prevent the paroxysms nor remove the cause. The writer believes that the toxicity of the drug has been much exaggerated; some of his patients took up to forty drops a day without injury. H. Vaquez (Archives des maladies du cœur, des vaisseaux et du sang, January, 1908; Journal of the American Medical Association, May 16, 1908).

OBESITY, SIMPLE AND COMPLICATED.

There have always been distinguished two types of obesity; in the one the patients are florid, vigorous, and looking well; in the other cachectic, feeble, and pale. Physicians have been accustomed to designate the former as sanguine and plethoric, and the second as anæmic and lymphatic, while popular language has distinguished them as good fat and bad fat. These two types are the results of different pathological processes. The one is simple florid obesity in which the augmentation of weight is due to the accumulation of fat in the organism; the other is complicated, and in it the augmentation of weight is due in part to accumulation of fat, in part to the retention of water. Complicated obesity is a sequel to the simple form. The fatty infiltration causes the heart excessive fatigue and diminishes the resistance of the myocardium, the intoxication produced by supra-abundant alimentation, especially by supra-alimentation with meat, gradually produces changes in the kidney and brings about renal sclerosis. The alterations of the heart and kidneys, the fatal but slow result of habitual supra-alimentation, may form a complication if an intercurrent disease causes a strain on the kidney or the heart. Pulmonary emphysema, which is frequently observed in these patients, is one of the causes that favor insufficiency of the myocardium. Hence in certain patients a florid obesity rapidly gives way to a complicated, cachectic obesity, with its train of visceral alterations and functional insufficiencies. The combination of Bright's disease with myocardic insufficiency results in a retention of the chlorides with the œdema. Marcel Labbe (Presse médicale, March 28, 1908; New York Medical Journal, May 2, 1908).

PARATHYROID GLANDS, FUNCTIONAL RELATIONSHIP OF THE THYROID TO THE.

The author has made an elaborate comparative study of the parathyroid glands in various animals and birds. He comes to the conclusion that the parathyroid may develop into thyroid tissue, and that it has no function of its own, but secretes colloid, just as does the thyroid. That he is wrong in this belief has been abundantly shown by the recent experimental work on the subject, to which he does not allude. The work of MacCullum and others has shown that removal of the parathyroids from man and from various animals produces tetany, which may be controlled to a certain extent by the administration of parathyroid extract. Moreover, it has been shown not only that removal of the thyroid produces myxœdema, but that

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in spontaneous myxœdema, although the thyroid gland is practically wholly destroyed or absent, the parathyroid glands are preserved. The functions of the thyroid and parathyroid are therefore entirely distinct from one another. D. Forsyth (Quarterly Journal of Medicine, January, 1908; Boston Medical and Surgical Journal, April 23, 1908).

TUBERCULOSIS, PASSIVE PULMONARY HYPERÆMIA AND.

The author gives the result of a study as to the protection afforded against pulmonary tuberculosis by cardiac disease producing passive hyperæmia of the lungs. His material is based on 1900 autopsies at the Massachusetts General Hospital, 1811 at the Boston City Hospital, and 529 at the Long Island Hospital, Boston. Mitral stenosis seemed the best form of heart lesion to study, because it is easily recognized, usually very chronic in its course, and accompanied with marked hyperæmia. Only pronounced cases of this type were selected; all children under the age of twelve were also excluded. The figures obtained indicated very clearly that mitral stenosis afforded a marked relative immunity against pulmonary tuberculosis, which is in proportion to the grade of the lesion, and that if infection does take place it usually runs a mild course, with a strong tendency toward cure. The various possibilities and theories accounting for this immunity are discussed, and the writer states that a process of exclusion leads us to the belief that the active agent in this immunity must be passive congestion of the lungs. Bier has shown that such passive congestion has a marked action to check inflammations due to the tubercle bacillus as well as the ordinary pyogenic bacteria, which is apparently largely due to certain substances in the blood-serum, the so-called alexins and antibodies, partly, no doubt, to the leucocytosis induced in the congested tissues. In the lungs the increase of connective and elastic fibers may play a part. The question is of practical importance, both as to prognosis and treatment, especially the latter. The writer notices in this connection the attempts that have been made to produce artificial hyperæmia of the lungs, and particularly the recent experiments of Kuhn with his mask, impeding inspiration and producing lung congestion by aspiration of blood from the right side of the heart into the lungs. Decided benefit has been reported from this method and actual cure claimed for favorable cases. A more extensive trial, however, is needed before a final opinion can be given as to the value of the method. W. Fileston (Journal of the American Medical Association, April 11, 1908).

TUBERCULOUS PERITONITIS.

From a study of 122 cases, the writer states that the onset of symptoms is often sudden and stormy, both in the cases where there is ascitic fluid present and where it is absent. Fluid can go quickly, and improvement take place very rapidly both with and without an operation. Tuberculous peritonitis can be latent, unsuspected, so far as symptoms are concerned, and it can remain apparently unchanged for months after active symptoms have subsided and the patient returned to apparent health. Foci for the infection of the general peritoneum have not been found in the Fallopian tubes or in the vermiform appendix in this group of cases.

Operation should only be undertaken when there is some distress from the distension; it is better to wait for a period

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with the patient at rest and under the same hygienic conditions to which any case of pulmonary tuberculosis would naturally be subjected, namely, rest, fresh air, good food and, later, moderate regulated exercise. If after six or eight weeks there is no improvement in the symptoms operation should be considered.

When once the disease is arrested, whether by operation or hygienic methods of treatment, the patients must be taught to regulate their lives with the same care that they would had the disease been located in the lungs. A. K. Stone (Boston Medical and Surgical Journal, May 7, 1908).

TYPHOID FEVER, NATURE OF.

Typhoid fever is essentially a septicæmia. Mere blood invasion, however, does not produce evidence of disease. Intoxication occurs mainly through the destruction of the bacilli by the body cells and fluids. Intracellular poisons are thereby set free, and the individual then first shows signs of disease. The intensity of the intoxication will depend upon the rate of destruction, modified, of course, by varying efficiency in elimination. Rapid destruction of a few bacilli will cause a short, sharp attack of fever, ending perhaps by crisis. Rapid destruction of a large number of bacilli will cause intense intoxication of longer duration. This produces the fulminating type of the disease and is frequently fatal. Slow destruction of moderate numbers of bacilli will cause moderate intoxication of longer duration—the true "slow" fever. If the gradually increasing immunity does not, within a reasonable time, check the growth of the bacilli, then the intoxication must gradually increase and the individual finally die.

As regards specific therapy in typhoid fever: In the absence of a true antitoxin we have had to fall back on the use of various bacterial products which have had for their aim the stimulation of the individual to destroy the invading bacilli with greater intensity. Such treatment is suitable for those cases only which are not already hyper-intoxicated. In the presence of severe typhoid poisoning the indication may be to *check* in some way bacillary destruction. This might be accomplished (a) by inoculation of the non-toxic typhoid substances to divert destructive agents from the living toxin-bearing bacilli, or (b) by cold baths, to combat, by low temperature, rapid phagocytosis and bacteriolysis, or (c) by giving drugs which shall lower metabolic activity (quinine, etc.). M. W. Richardson (Boston Medical and Surgical Journal, May 7, 1908).

VASOCONSTRICTION AND DILATATION, THERAPEUTICS OF.

High arterial tension is divided by the author into three stages: 1. Persistent high tension, due to hypertonicity of the muscular coats of the arter- and arterioles. 2. Progressive hypertrophy of the cardio-vascular muscular tissue with degenerative changes in the intima and arterial fibrosis. 3. Diminished muscular control, due to progressive fibrosis causing increased obstruction and cardiac exhaustion. Treatment must take into consideration not only the stage but also the cause. The first stage is the curable one, the indication being to remove the cause or to bring the blood-vessels under normal physiologic control. Tobacco, alcohol, improper diet, and mental and nervous excitement are among the principal causes. In the second stage, in addition to the factors present in the first stage, there is progressive obstruction from arterial capillary fibrosis.

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Here it is necessary to determine how much of the obstruction is due to spasm and how much to sclerotic changes. High blood-pressure is often a conservative process. Excessive blood-pressure does not itself constitute an absolute indication for treatment. Active vaso-dilators should be used only to meet emergencies—angina pectoris, cerebral disturbances, etc.

The effect of vasomotor dilators is not to be gauged entirely by the fall of blood-pressure, but also by the patient's subjective feeling and the pulse rate. The writer is convinced that the present inordinate use of vaso-dilators to control arterial tension is not free from danger of secondary effects in increased tendency of the vessels to spasm on slight reflex irritation. Control of high blood-pressure by cardiac sedatives is justifiable only when cardiac hypertrophy is excessive and cardiac overaction occurs under nervous excitement or physical exertion. One of the most valuable methods of treatment lies in measures influencing cutaneous vascular dilatation—baths, counter-irritation and high-frequency currents—or the muscles—massage and restricted exercise. Patients who suffer from vaginal attacks on exposure to cold should have the peripheral circulation educated by graded baths. In the bath treatment, however, all the details should be adapted to the individual patient. Massage can render great service. While thyroid extract does have an effect on blood-pressure it is a drug that must not be entrusted to the patient. Potassium iodide is much safer, 15 grains (1 grąm) daily in divided doses, continued over two or three years, with a week or two's intermission every two or three months. E. Le Fevre (Medical Rcord, April 25, 1908).

Announcements.

A SOCIETY FOR COPING WITH THE EMERGENCIES OF PEACE AND WAR.

The National Volunteer Emergency Service, instituted in 1900, has recently been reorganized by the election of Dr. James Evelyn Pilcher, the distinguished editor of *The Military Surgeon*, as its Director General, and Dr. F. Elbert Davis, of New York, as its Adjutant General. Its work will be conducted along military lines, the details being worked out in three separate Corps, a First Aid Corps, a Public Health Corps, and a Medical Corps—the latter consisting of physicians, with rank from Lieutenant to Colonel, according to length of service, to whom are afforded special opportunities for emergency training. It includes among its personnel a large number of notable personages, and is rapidly extending its membership throughout the country. Full details regarding the Service and its great work may be obtained by addressing Director General Pilcher at Carlisle, Pa.

THE "MEDICAL ERA'S" GASTRO-INTESTINAL EDITION.

The "Medical Era," St. Louis, Mo., will issue its annual series of Gastro-intestinal editions during July and August. In these two issues will be published between 40 and 50 original papers of the largest practical worth, covering every phase of diseases of the Gastro-intestinal canal. Sample copies will be supplied readers of this journal.

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Book Reviews

A Text-book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M.D., Emeritus Professor of Gynecology in Starling-Ohio Medical College, and Sometime Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony and St. Francis Hospitals; Consulting Gynecologist to Park View Sanitarium, Columbus Ohio; Fellow of the American Association of Obstetricians and Gynecologists; Member of the American Medical Association, of the Ninth International Medical Congress, etc. Second, Revised Edition. Illustrated with 350 Engravings, a Colored Frontispiece, and 13 Full-page Half-tone Plates. 642 Royal Octavo Pages. Extra Cloth, $4.50, net; Half-morocco, Gilt-top, $6.00, net. Sold only by Subscription. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

In this second edition the general plan, adopted for the previous edition, of dividing the subject into fifty chapters, each equivalent to a lecture in a collegiate course, has again been followed, and the subject matter brought up to date. The volume as a whole is the work of a man of large practical experience and good judgment, whose teachings are sound and conservative. The therapeutic indications are clearly stated and in the surgical treatments the latest operative methods are usually described. We miss a description of the modern Westheim operation for carcinoma of the cervix, the author apparently still preferring vaginal hysterectomy for this condition.—T. A. E.

Diseases of the Heart. By Professor Th. von Jürgensen, of Tübingen; Professor Dr. L. Krehl, of Griefswald; and Professor Dr. L. von Schrotter, of Vienna. Edited, with additions, by George Dock, M.D., Professor of Medicine, University of Michigan, Ann Arbor. Octavo of 848 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $5.00 net; Half-morocco, $6.00 net.

Professor Dock is to be congratulated upon the manner in which the present volume of "Nothnagel's Encyclopædia" is presented. The accuracy of the translation, the appropriateness of the commentaries introduced and the care with which every feature of the work has been handled are beyond praise. Insufficiency of the heart, endocarditis, and valvular disease are treated by Professor von Jürgensen; the many diseases of the myocardium and the cardiac neuroses by Professor Krehl, and the diseases of the pericardium by Professor Von Schrötter. This volume is unquestionably one of the best of the series.—C. E. de M. S.

Cancer of the Womb. Its Symptoms, Diagnosis, Prognosis, and Treatment. By Frederick John McCann, M.D. (Edin.), F.R.C.S., (Eng.), M.R.C.P., (Lond.), Physician to In-Patients, Samaritan Free Hospital for Women, London; Lecturer on Gynæcology, Medical Graduates' College and Polyclinic, London; Honorary President Section of Obstetrics and Gynæcology, Fifteenth International Medical Congress, Lisbon, 1906. London: Henry Frowde or Hodder & Stoughton, 1907.

Dr. McCann's book may be said to represent a comprehensive clinic upon uterine cancer. Each type of cancer which occurs in the uterus is beautifully illustrated by photographs from organs soon after removal, and by microscopical sections. The author is of the opinion, and on good ground, that many prepared illustrations commonly published bear little or no resemblance to cancer as seen in the living; hence the use of photography in those presented. The text is also of marked interest, each type and many illustrative cases being described in detail. Great stress is laid upon the importance of an early diagnosis especially since surgical treatment, when promptly employed, is now known to afford a good chance of recovery. On the whole Dr. McCann's book is a valuable addition to our literature on the subject of uterine cancer.—C. E. de M. S.

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MONTHLY CYCLOPÆDIA
AND
MEDICAL BULLETIN
(PUBLISHED THE LAST OF EACH MONTH)

Medical Bulletin Section

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Clinical Lecture

CHRONIC INTERSTITIAL NEPHRITIS.[1]

BY JOHN V. SHOEMAKER, M.D., LL.D.
PHILADELPHIA.
Professor of Materia Medica Therapeutics, Clinical Medicine and Diseases of the Skin in the Medico-Chirurgical College and Hospital, Philadelphia.

GENTLEMEN: This patient is suffering from a chronic affection common among men who lead such an active life as this patient has done for the past fifteen years. His history is interesting and reads as follows: He is 53 years of age, occupation express driver, exposed to wet and cold.

Family History.—Both his parents died of nephritis. His older brother died of "heart disease," and two sisters died of pulmonary tuberculosis. One sister and one brother are living and in good health. Two of his grandparents died of cancer.

Previous Personal History.—As a child he had scarlet fever, measles, and whooping-cough; typhoid fever at the age of 23 years, and a severe attack of influenza at the age of 41 years.

Present Illness.—He states that ever since he has had the attack of influenza, his health has not been as good as it previously had been. The disease left him weaker and less able to perform his duties as an express driver. He was more subject to attacks of cold and became more easily tired on exertion. Seven years ago he first noticed occasional swelling of his ankles and slight puffiness under the eyelids. The quantity of urine increased and was lighter in color. Headache, pain in the back, dyspnœa, and more swelling of his legs and ankles soon followed. At present he complains of constant headache, dyspnœa, occasional nausea, and vomiting; pain in the epigastrium, anorexia, and constipation.

[1] Delivered in the Clinical Amphitheatre Medico-Chirurgical Hospital.

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Social History.—He is married and is the father of four healthy children.

Habits.—His habits have not been good for the past fifteen years. He uses tobacco, both smoking and chewing it in excessive quantities. While he does not take alcoholic beverages to the point of intoxication, yet he is in the habit of drinking both whiskey and beer daily.

Physical Signs.—General examination shows a corpulent male, weighing 238 pounds. His skin looks pale and waxy, but feels warm and moist to the touch.

Inspection and palpation over his chest reveals a downward displacement of the apex-beat to left of the nipple line, with a heaving and circumscribed apical impulse.

Percussion elicits a dull note an inch and a half to the left of the nipple line in the fifth and sixth interspace, and a half inch beyond the left sternal line. Thus the entire præcordial area is enlarged, showing also that the hypertrophy is chiefly confined to the left ventricle.

Auscultation reveals a mitral systolic murmur with muffled mitral sounds. The second aortic sound is markedly accentuated, due to the immense vascular pressure, the systolic pressure being 215 mm, and the diastolic pressure 190 mm. The second pulmonic is also accentuated. The hyperresonant note over the lungs is indicative of general emphysema.

Percussion and palpation show slight enlargement of the liver. The patient is so corpulent that it is difficult to determine definitely the presence or absence of ascites.

The lymphatic glands are normal, but there is slight œdema of the ankle joints and puffiness of the lower eyelids. The patient complains of dimness of vision, and an examination of the retina with the ophthalmoscope showed marked retinitis albuminurica.

Urinalysis.—Albumin, small quantity; glucose, negative; indican, slight reaction; quantity voided in twenty-four hours, 64 ounces; specific gravity, 1012; reaction, acid; color, pale straw.

Microscopic Examination of Sediment.—Casts, many long hyaline; cylindroids, numerous; erythrocytes, a few; leucocytes, many.

Diagnosis.—This is undoubtedly a case of chronic interstitial nephritis, the diagnosis of which is easy, and can be readily made from the subjective symptoms, the age, heredity, physical signs, and urinalysis, which are all pathognomonic of chronic interstitial nephritis. However, we should always be careful in our diagnosis owing to the fact that chronic parenchymatous nephritis in its milder form may be confounded with chronic interstitial nephritis. The differential points are placed on the blackboard for your convenience.

Chronic Interstitial Nephritis.	*Chronic Parenchymatous Nephritis.*
1. Occurs late in life.	1. Common in young adults.
2. No œdema or slight.	2. Œdema well marked.
3. Urine excessively increased.	3. Urine usually diminished, may be slightly increased.
4. Albumin small quantity.	4. Albumin large quantity.

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5. Specific gravity diminished.	5. Specific gravity normal.
6. Casts hyaline.	6. Casts granular and hyaline.
7. Urine pale in color and increased in amount.	7. Urine highly colored and diminished in amount.
8. Onset slow and insidious.	8. Onset gradual but well marked.
9. Duration from five to twenty years.	9. Duration from a month to five years.

Pathology.—The kidneys are smaller than normal. They are hard and granular. When the capsule is stripped off, portions of the kidney substance adhere to the capsule, due to the attachment of the capsule with the substance of the kidney by the formation of connective tissue.

Microscopically is noticed an increase of connective tissue between the tubules, developing from without inward, destroying many of the tubules and blood-vessels. The malpighian bodies are surrounded with concentric layers of nucleated connective tissue cells.

Other pathological conditions present in such cases are, as in this case, general arterial sclerosis, hypertrophy of the left ventricle, and retinitis albuminurica.

Etiology.—The cause of this man's nephritis can be laid to heredity, occupation, influenza, and his excessive use of tobacco and alcohol.

Among the predisposing causes are lead-poisoning, gout, rheumatism, business anxiety, mental worry, and sex.

Chronic interstitial nephritis is twice as common in the male as in the female.

Treatment.—The successful treatment of these cases must be hygienic, dietetic, and medicinal. The surface of the body should be kept warm by flannels being worn next to the skin. This will lessen the danger of internal congestion involving the kidneys. A warm bath before retiring is beneficial to stimulate the function of the skin and lessen the arterial pressure.

The diet must consist of milk and broths principally for the first few weeks; indeed, skimmed milk and buttermilk are often better borne by these patients and are sufficient to keep up the nutrition of such corpulent patients, as is the case with this man.

The animal or nitrogenous foods are interdicted in this patient, and should be avoided in all similar cases. His diet will be milk and broths until less casts and no albumin will be found in the urine. We will then allow him small quantities of well-cooked rice, baked potatoes, toasted bread, and a few other easily digestible vegetables. Alcoholic beverages and other stimulating drinks are especially interdicted, and he must abstain from their use entirely.

Medicines will do much for these patients to relieve the symptoms, but it will not cure the disease.

Calomel is an invaluable drug to stimulate the function of the liver, and at the same time it possesses diuretic virtues by its stimulating action upon the renal cells. This patient will receive at least two calomel purges each week.

As a diuretic and its stimulating action upon the heart and blood-vessels to lessen arterial tension, the following combination is very valuable:—

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℞ Spiritus glycerylis nitratis, *m* xx.
Sparteinæ sulphatis, gr. iv.
Phenylis salicylatis, ʒj.
Misce. Fiant capsulæ no. xx.
Signa. One capsule every four hours.

The patient has been taking this prescription for the past three days with marked success. Other diuretics, such as infusion of buchu, infusion of digitalis, liquor ammonii acetatis, and liquor ferri et ammonii acetatis are all valuable and indicated in these cases.

Prognosis.—These patients can never be cured. The destroyed renal tissue can never be restored to its normal condition and function. However, by proper diet, hygiene, and medicine, the life of this patient can be greatly prolonged, probably from ten to fifteen years. Of course the patient must abstain from all former habits and exposure to the wet and cold. These patients do better in a warm, dry climate where the temperature is not subject to sudden changes.

Original Articles

THE DIETETIC AND MEDICAL TREATMENT OF CHRONIC CATARRHAL GASTRITIS.[1]

By A. C. MORGAN, M.D.
Assistant Professor in Medicine, Medico-Chirurgical College of Philadelphia.

In considering the treatment of any diseased organ due appreciation of the deranged condition of the normal physiologic function of the part must be borne in mind.

The next vital point in a given case is concerned with determining the cause. When this can be located and removed, much can be accomplished in relieving symptoms and in inhibiting the further advancement of the pathologic process.

The chief functions of the stomach are those of motion and absorption. The secretions are pepsin, Hcl, rennet, and mucus.

In the treatment of chronic catarrhal gastritis we must pay special attention to the condition of the heart, liver, lungs, and kidneys as the possible primal causes of passive congestion of the stomach, and appropriate treatment should be instituted toward placing these organs in the best possible condition.

Direct Treatment.—The dietetic treatment of this disease is more important than giving drugs. When we remember the large chapter of conditions or causes to which "dietetic errors" opens the pages, we can appreciate the force of this statement.

[1] Read at a Symposium on Diseases of the Stomach at a meeting of the North Branch of the Philadelphia County Medical Society, April 21, 1908.

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Regularity in time of eating should be insisted upon in every case.

There should be a clear knowledge of the amount of food to be taken at a given time. It is not sufficient to roughly outline this fact but explicit statement must be made. It is not sufficient to tell our patient to stop eating just before hunger is appeased or when the stomach commences to feel full; we should remember that the motor function of the stomach is likely impaired, and we must guard against overloading it.

"What is good for the eyes is ofttimes not good for the stomach," is a true saying, and this seems to be particularly true in chronic catarrhal gastritis, even though the sight of tempting food, as a rule, acts as a stimulus to the secretion of gastric juice.

A patient may be unable to eat breakfast for some time after arising in the morning. If there is no particular desire for food the morning meal should always be light in character and amount. If, however, the stomach wakens with the other parts of the body, there is no reason why a moderate or full meal may not be taken at this time.

Due attention should be paid to the condition of the teeth. If any cavities exist, they should be filled. If many teeth are lacking, false ones should be supplied for the purpose of tearing or grinding, as the case may be.

Ideally considered, the patient should drop all thought of business when partaking of any meal. Many professional men, especially physicians, err on this point. The late Dr. William Pepper was said to have had his meals served to him while seeing patients in his office. The great tendency with Americans to-day is to carry business affairs to the lunch table, and while they may save time for the present, they surely are borrowing from the future.

Certain single articles of food may be easily assimilated, such as oysters, stewed or panned. Ice cream, when taken alone, may also be well assimilated.

The combination of certain foods, as oysters, shell fish, and ice cream ofttimes will precipitate a violent acute exacerbation of a chronic gastritis. Forcheimer well says: "In the diet, consideration should be paid to the subjective symptoms of the patient. When there is constipation prescribe milk, cream, fats; when there is diarrhœa, cocoa, eggs, meat; when there is flatulence, as few carbohydrates as possible. The articles of food should be chosen so as to recognize the likes and dislikes of the patient, and, as far as possible, to profit by his experience as to their digestibility in his particular case."

The character of food taken depends upon the power of the stomach to perform its work. If the motor power is much diminished, then all meals must be small in amount, but repeated at more frequent intervals than usual. If proteid digestion is deficient, the amount of solids taken must be lessened and they must be ingested in the best possible condition for assimilation.

If there is much mucus present it must be gotten rid of before attempting to partake of food. This is best accomplished by sipping one or two glassfuls of a hot alkaline water, such as normal saline. If this does not suffice, lavage must be resorted to. Hot breads should not be taken, as they irritate the mucus membrane, and also favor fermentative processes by inhibiting gastric functions and causing food to remain in the stomach beyond the normal time.

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The daily amount of liquids required for the body needs should be less than three quarts daily. More than this may be harmful. Milk either plain, alkalinized or partly digested, as in kefir or kumyss, should always be tried, as it represents a perfect food in itself.

We should avoid all highly acid and spiced foods, as by their irritating qualities mucus in excessive amounts may be poured out.

Vegetables, well cooked and in moderation, are permitted as a rule, with the exception of those which cause flatulence, such as cauliflower, lima beans, etc.

Lavage.—Theoretically, the stomach tube should be used in order to cleanse the stomach whenever food is retained for an unusual length of time, or when mucus is excessive. Practically the nervous element in a large proportion of cases is so marked that the good results of this procedure are negatived by the disadvantages ensuing from attempts to swallow the tube.

When excessive fermentation, as from retained food or an excess of mucus, is present, lavage should be used. If used once daily the best results are obtained from cleansing the stomach at bedtime. This puts the stomach at rest and favors a comfortable night's sleep, thus preparing the patient for the duties of the following day. As the stomach will then be empty of food during the night, the secretion of much mucus will not occur.

If used twice daily the morning lavage should be done before breakfast to get rid of the accumulated mucus over night.

If muscular atony be present, massage or brisk contact sprays of alternating hot and cold water will do good.

Hot baths are soothing to nervous symptoms, eliminate poisons, and promote general well being.

Rest of body and mind after meals will aid other efforts by improving the patient's reserve power and aiding digestion. In a very marked or stubborn case of chronic catarrhal gastritis a prolonged course of rest cure will at times be of service.

Drugs.—These are of secondary importance in the treatment of chronic catarrhal gastritis. Sound basic principles should be well understood before prescribing them. If there is a deficiency of Hcl, this acid in dilute form should be administered from ten minutes to an hour after a meal. Sometimes it may be advantageously combined with the meal.

Pepsin, while largely prescribed, is not often indicated, for the reason that pepsin is usually present.

If fermentation or flatulence be excessive, bismuth subnitrate or subcarbonate, calcined magnesia, or creosote may be used.

Charcoal may be added if any intestinal fermentation be present.

If hyperacidity exist, large doses of sodium bicarbonate and calcined magnesia, after meals, are indicated.

The use of saline waters, especially those containing large percentages of sodium sulphate, after meals in acidity, or before meals in subacidity, accomplishes good results in correcting the disproportion of gastric juice and aiding intestinal peristalsis as well.

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If atony of the stomach muscle be present, bitter, slightly astringent drugs, as tincture of nux vomica, quassia, cinchona, or hydrastis, given in a small amount of water before meals, will do good.

Hcl is an adjuvant to or replaces absent Hcl in normal gastric juice. It stimulates the pancreatic secretions as well. Hcl accelerates the stomach motility and digests proteids in a proper time, therefore empties the stomach early and acts as an antiferment at height of digestion or before meals. Canine juice (gasterine) is said to be of service in atrophic gastritis.

Nervous symptoms, which are much benefited by treating the primary conditions of the stomach, must be treated as they arise.

Iron must be used, as the hæmoglobin count is often low.

3118 Diamond Street.

OIKEIOMANIA.

[*Synonym*—Œcimania.]

By T. G. STEPHENS, M.D., Ph. D.
SIDNEY, IOWA.

Dr. Hammond, in his work on diseases of the nervous system, defines insanity to be the manifestation of diseases of the brain characterized by a general or partial derangement of one or more faculties of the mind, in which concurrence is not abolished, mental freedom is perverted, weakened, and destroyed. One of the most humiliating forms of insanity is oikeiomania, which is a classical word belonging to the Greek language and associated with a comprehensive class of anomalies of the brain.

From a psychological standpoint, oikeiomania is a morbid state of domestic affections, where there is an unreasonable dislike of wife or child, without cause or provocation, turning love into hate and hate increased, and is one of the most painful and common symptoms of insanity. The mind of one suffering from this affection is in a distorted condition.

Oikeiomania has several characteristics, all in close companionship. Its most notable congener is oikiomiasmata, belonging to a household of morbid emanations from domestic sources, being the most predominant as an unreasonable dislike of wife or child without any provocation, as well as change of natural affections toward relatives—mother forgets the suffering child, the sister ceases to love her brother, and husband dislikes his wedded wife. "Insanity includes every species of mental aberration."—State *v.* Wilner, 40 Wis., 304.

We have monomania, a derangement of a single faculty of the mind on one subject only.

Looking backward to antiquity, we find mental diseases in highness. Nebuchadnezzar suffered a temporary eclipse, that strange form of madness the Greeks called lycanthropy, and after four or seven years made a good recovery. During his insanity he believed himself changed into a wolf, imitated the voice and habits of that animal.

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His queen, Nitrocis, also became a monomaniac from a different cause; her insanity was nostalgia, homesickness from her far-off girlhood, and had an excessive desire to return to the woodland heights, where she had spent her early days.

It would be far beyond the compass of this article to follow out in detail many of these characters. It cannot be doubted that a person in his delirium from a fever or a drunkard from his excitement or stupor, is at the time temporarily insane.

In nearly half of the cases of insanity, the affective condition is thus perverted and the memory not necessarily impaired in many cases, but is exaggerated.

It is impossible to trace the boundary line where sanity ends and insanity begins.

The person whom we are going to consider was Fred. Doane, born in Connecticut, of whose ascendants we know nothing, came to Fremont County, Iowa, when a young man, and died on January the 1st, A.D. 1908, from arteriosclerosis, after an acute illness of ten hours; had been insane or an oikeiomaniac for forty-three years, since the birth of his first child; had had nine children, six living at the present time.

When first married was in meager circumstances, a tenant, but had an excessive greed for wealth, leaving an estate of about $250,000.

At the birth of their first child domestic felicity vanished and remained so until his death, knocking his children down with his fist or clubs, kicking his wife until she could not occupy the sitting posture.

We have now drifted to the jurisprudence of our subject œcimania, using the synonym.

We may not be able to meet another case of the kind for decades. The form of this matter arose upon an application to probate the will of F. A. Doane, deceased. It was claimed by contestants that he was a monomaniac, afflicted with what is technically known as oikeiomania.

The alleged will of F. A. Doane passed over his children and gave all of the property to his grandchildren. The case was tried to a jury, and at the close of all of the testimony the District Court of Fremont County, Iowa, directed a verdict for the contestants and against the will of F. A. Doane, deceased.

Dr. Gershom H. Hill, alienist, from Des Moines, Iowa, was the principal medical witness; other local experts testifying along the line laid out by Dr. Hill.

MEMBRANOUS RHINITIS.

By E. B. GLEASON, M.D., LL.D.
Clinical Professor Otology in the Medico-Chirurgical College, &c.

MEMBRANOUS rhinitis is an acute inflammation of the nasal mucous membrane characterized by the formation of a pseudo-membrane involving the epithelial and sometimes the sub-epithelial structures.

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Etiology.—The disease is more common among poorly nourished children living in unhygienic surroundings. Occasionally an adult is attacked. One of the writer's cases was a woman 24 years old. The disease is the result of inoculation of the nasal mucous membrane by a micro-organism capable of generating in that locality a pseudo-membrane, although it should be born in mind that the slough resulting from galvano-cautery wounds, either in the nose or on the tonsils, resemble very closely pseudo-membranes; and the same is true to a certain extent of other nasal traumatisms.

Pathology.—The pseudo-membrane is generally thick, pulpy, and grayish white, and during the earlier stages is removed with considerable difficulty, leaving a bleeding surface; later, it is more loosely attached and more easily removed. After each removal, if antiseptics are used, a smaller and smaller surface becomes again covered by exudate. The membrane is a mesh work of fibrin entangling leucocytes, degenerated epithelial cells, and micro-organisms. Of the latter, Burrill-Holmes states:—

"It would be a mistake for me, however, to leave the impression that it is easy to positively identify the organisms in smears without some experience, as is demonstrated by the smaller percentage of errors, as this experience is augmented. Smears obtained from the nose in particular are ofttimes difficult to interpret. But then I do not believe that either smears or cultures are of much value in diagnosticating nasal diphtheria without the clinical evidence or guinea-pig tests, because the nose is a frequent habitat of an organism the morphology and cultural characteristics of which—to the exclusion, perhaps, that it renders bouillon slightly turbid—are identical with those of the Klebs-Löffler bacillus. It does, however, lack virulence."

Besides the Klebs-Löffler bacillus and that resembling it (Hoffman's bacillus), the streptococcus, staphylococcus, pneumococcus, and other micro-organisms are capable of producing a pseudo-membranous rhinitis.

Symptoms.—The nasal mucous-membrane is greatly swollen, and that of the inferior turbinate and adjacent parts of the septum is covered by a pseudo-membrane which sometimes involves other portions of the nose. The pharynx usually is almost completely free from pseudo-membrane, or there may be one or more small patches, one of which may be on the tonsil. The sufferings of the patient are mostly those resulting from the occluded nostrils. However, the throat is generally somewhat sore, and the cervical glands, while not swollen, are tender to the touch and there is sometimes a slight elevation of temperature. Untreated, the disease runs a course of from three to six weeks; under treatment, ten days to two weeks.

Treatment.—The pseudo-membrane should be examined by a careful and competent bacteriologist for the presence of virulent Klebs-Löffler bacilli, and, if present, antitoxin should be injected, the case isolated and treated as diphtheria; although primary nasal diphtheria usually runs a mild course, and the danger of inoculating other individuals is probably less than in faucial and laryngeal diphtheria. The writer has never seen an instance in which membranous rhinitis was apparently contracted from an individual similarly affected, although, in some instances, cases before coming under his care had

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attended school, played or even slept with other children. In some of these cases the report of the bacteriologist stated that Klebs-Löffler was present. However, it is possible that in all these instances, the cause of the pseudo-membrane was not the Klebs-Löffler bacillus, but that of Hoffman, which is morphilogically identical and not an uncommon inhabitant of the nose.

As in the present state of our knowledge it is impossible to make a reliable differentiation between the Klebs-Löffler bacillus and that of Hoffman, except by guinea-pig inoculations or some similar test, requiring several days, and as antitoxin, to be most effective, should be used within the first forty-eight hours after the onset of diphtheria, it is possibly better, in recent cases, where the bacteriologist reports that microscopic examination of "smears" show the presence of a bacillus, possibly that of diphtheria, to at once inject antitoxin without waiting several days to determine the result of guinea-pig inoculations. In cases not seen before the pseudo-membrane has existed for a week or more, it is better to wait the result of guinea-pig inoculations, as in such cases the probability of antitoxin doing much good is somewhat remote.

In cases where the pseudo-membrane is the result of the presence of some other micro-organism than the Klebs-Löffler bacillus the use of antitoxin is manifestly not indicated. If the cervical glands are inflamed the skin of the neck over them should be kept covered by a 10-per-cent. ointment of ichthyol in lanolin until the inflammation subsides. The medical attendant should see his patient at least once a day, and in older children pledgets of cotton, saturated with a 3-per-cent. solution of cocain, should be inserted into each nostril, and after the turbinates have contracted the pseudo-membrane should be withdrawn from the nose by means of Politzer's ear forceps.

After the use of cocain this is usually readily accomplished, especially in the later stages of the disease. After the removal of the membrane, the nasal cavities should be washed with Dobell's solution by means of an atomizer yielding a coarse spray, or with the syringe. In very young children it is sometimes impossible to cleanse the nares thoroughly, and the operator will be obliged to content himself by irrigating the nose by means of a medicine dropper with Dobell's solution or other alkaline wash, to which a small proportion of hydrogen dioxide has been added. After the nasal cavities have been as thoroughly cleansed as can be done with gentleness, the Schneiderian membrane should be sprayed with a 10-per-cent. solution of argyrol.

Between the physician's visits the treatment should consist either in spraying the nose every three hours with a 10-per-cent. solution of argyrol, or the insertion into each nostril of an ointment of gallic acid—3 to 10 grains to the ounce—of vaseline, according to the age of the child.

During the attack the child is probably best confined to the house, even in summer, although this is sometimes hard to accomplish when the child's temperature is normal and it feels entirely well, except for the discomfort of nasal stenosis. In the more severe cases the child's condition may require that it remain in bed, and in such cases tincture of the chloride of iron—5 to 10 drops in water every two hours—may be given with advantage, either with or without strychnine.

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The slight pharyngitis sometimes present yields to argyrol spraying, or the tonsils may be sufficiently inflamed to require one or more applications of a solution of nitrate of silver, 60 grains to the ounce of water.

THE MICROSCOPIC DIAGNOSIS OF DISEASES BY BLOOD SMEARS.

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PHILADELPHIA.

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The portion of this branch of hæmatologic work that, in my judgment, appeals most to the clinician and practitioner is not technical methods for obtaining results, but the clinical significance of such results, independent of how we obtain them. It shall, therefore, be my purpose to outline briefly the clinical evidences, that are of unquestionable value, obtained through a microscopic study of the blood after it has been smeared upon cover glasses or slides.

Given a blood smear without any further knowledge of the patient from whom it has been obtained, it is possible to make a diagnosis in but a small number of diseases, *i.e.*, malaria, filariasis, chronic plumbism, trypanosomiasis, leukæmia, chlorotic anæmia, and anæmias. *The diseases* in which such blood-examination may support the further clinical study of the case in question are: anæmia, with reference to the particular type; pneumonia, sepsis, trichinosis, infection with intestinal parasites, and all diseases where leucocytosis is present. It is further of service in connection with acute mania, melancholia, poisoning from both mineral and gaseous substances, and conditions resulting from malnutrition—*e.g.*, syphilis, glandular tuberculosis, etc.

Let us first consider those diseases where living animal parasites are to be found in the circulating blood, for the elimination of the existence of such diseases, as well as the confirmation of their existence, is alike of interest to the medical profession in this particular section and in the tropical districts.

Malaria.—Studying the smears after they are properly fixed and stained, the detection of the malarial parasite is extremely easy and is equally positive with the study of the parasite in the fresh blood; although, if I were given a case of questionable malaria, I should prefer to have both the fresh and smeared blood for laboratory study. Whenever parasites are found that correspond to any one of the different malarial organisms known to a typical type of the disease, it is possible to make a diagnosis of, say, tertian, quartan, or estivo-autumnal fever. *It is to be remembered* particularly that in many bloods we are only able to say the patient is suffering from malarial infection, although in such cases, if given a sufficient number of smears taken at different times during the course of the disease, we would probably be able to determine the exact variety of the fever without a knowledge of the general clinical picture of the case. (A refinement rather than a practical phase of laboratory diagnosis.)

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There are many stains recommended for the malarial parasite, and each and every one has its particular advantages and, likewise, its disadvantages. The question of the stain to use is a matter largely of the particular like or dislike of a certain laboratory worker for one stain. In studying the malarial parasite merely for the purpose of diagnosis, almost any stain will answer, whether it be the most simple, that of eosin and hæmatoxylin with methylene blue, or some more complicated mixture. *Should one care* to study the structural elements of the parasite, then other stains are required; but these, I take it, do not concern us with reference to the diagnosis of malarial infection.

Filariasis.—The filaria sanguinis hominis is present in the peripheral blood of man, and smears taken at different hours during the day and night are almost certain to show the parasite whenever infection exists. *Personally,* it has been my privilege to study blood from only about 40 cases of filariasis, and all but two of these were diagnosed before smears were handed to me, and without a single exception every smear contained one or more filaria.

Various workers have recommended different methods for staining the filaria, but the method which appeals to me as the most practical one is that of eosin and methylene blue, staining for one-half minute with a weak alcoholic solution of eosin, and then for one-quarter minute with a weak aqueous solution of methylene blue. The question always arises as to the collection of blood during the night hours in order to find many filaria; but I am told by those who have had more experience than have I, that the rule is to find a greater number of filaria in the peripheral blood during the night, but that there are, as a rule, a few parasites present at any time during the twenty-four hours.

Trypanosomiasis.—The life cycle of the trypanosome is rather peculiar, and for this reason the characteristic form of the parasite is not always present in the peripheral blood. It has not been my privilege to study this parasite in man, but several years ago I had at the laboratory several rats infected with the trypanosome, and found the stain recommended for the filaria to answer well for this parasite, although here, again, it is necessary to employ special stains in order to study the minute anatomy of the parasite.

I have omitted the special staining method of both filaria and trypanosoma because, after having recognized the existence of either of these parasites in the blood, every man, whether he be a laboratory worker or a man engaged in general practice, will refer to some text-book for the special methods of staining these parasites.

Rocky Mountain Fever (Tick Fever).—It has been claimed that there are present animal parasites (?) in the blood of those suffering from Rocky Mountain fever, but this claim has not been proven by later observers. Personally, I have studied blood smears from but three cases of Rocky Mountain fever, but in none of these was I able to find the parasite that had been described.

The Anæmias.—All types of anæmia are recognized through a study of the smeared blood and, indeed, I often question whether or not a careful microscopic study of the smeared blood does not reveal more of actual value in this class of cases than does either counting or estimation of the hæmoglobin.

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By staining a specimen with eosin and whatever counter or nuclear stain may be desired, one gets the most nearly an accurate estimation of the real condition of the blood that is possible by the effect the eosin has upon the red cells—*e.g., if the red cells* stain deeply they are well charged with hæmoglobin, and we are able to say that the case is not one of anæmia, or, at least, each individual cell carries its normal quantity of hæmoglobin, and that the cell is, therefore, capable of functionating. *If the hæmoglobin* be reduced out of proportion to any reduction that may take place in the number of red cells, each individual cell stains feebly with eosin. *Again, should* the amount of hæmoglobin apportioned to each cell be greatly below the normal, some of the red cells will be overcharged with hæmoglobin and stain deeply, while others, due to a great impoverishment in iron, stain as mere shadows, and consequently are seriously damaged by this pathologic change. *There may be an unequal* distribution of the hæmoglobin in the same cell; for example, (a) certain portions of the cells staining well, while another area appears to be feebly stained with eosin, and in case this pale area has given up all its hæmoglobin it will stain with the hæmatoxylin or blue solution. *It is in lead* workers that we find this high grade of degeneration of the red cells, and due to certain portions of the cell having given up its hæmoglobin we get the so-called "punctate basophilia" produced by these areas staining with basic dyes. Punctate basic degeneration may be present in any type of anæmia, but it is most beautifully exemplified in the blood of chronic plumbism. *In certain* of the cells, where the hæmoglobin is below the normal, we find streak-like areas that do not stain with the eosin, but show as light patches which are often referred to as cracks or fissures—another type of degeneration of the cell.

Size and Form.—Still further evidence of degeneration of the individual red cell is placarded by a high degree of irregularity in both the size and shape of the cell. For example, where the red cells are uniform in size, it is quite probable that they will stain uniformly, the only variation present being that in some the central "light spot" is somewhat larger than it is in others. *Where cells* become greatly distorted they are also apt to stain feebly with eosin, or, as previously stated, to be poor in hæmoglobin. *The distortion* of the red cells conveys still further clinical evidence with reference to the blood condition, since it assures the fact that the serum in which such cells are suspended is not normal, and consequently permits of distortion of certain of the erythrocytes. *Again, when* the serum is not of the normal specific gravity many of the red cells become unusually large or swollen, but still stain feebly with eosin, proving that despite their enormous size they carry an abnormally small amount of iron pigment.

Hæmoglobinæmia describes a condition where, due to either distortion or swelling of the red cell or probably to peculiarity in the chemic composition of the blood-serum, the hæmoglobin escapes through the wall of the red cell and floats free in the serum. *In this type* of cases not only the cell stains with the eosin, but the entire field takes a pink color. The hæmoglobinometer does not detect this great change and, indeed, the hæmoglobin may be normal so far as shown by any hæmoglobinometer, and yet each red cell be greatly deficient in hæmoglobin.

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In those patients suffering from cyanosis, a study of the smeared blood is the only method we have of estimating the amount of hæmoglobin present.

Nucleated Red Cells.—The red cells may contain nuclei in both simple and in essential anæmia. Nucleated red cells are far more common in the blood of infants and before puberty than they are in older subjects, and, indeed, a comparatively mild type of anæmia in a child of six years of age may give the clinical evidence of many nucleated red cells. Red cells containing more than one nucleus were at one time conceded to be pathognomonic of pernicious anæmia, but to-day we attach a limited importance to the detection of multi-nucleated erythrocytes.

Significance.—Granting that all erythrocytes are at some time in the course of their formation nucleated, the theoretical explanation for these cells appearing in the peripheral blood is that the process of cell destruction is in advance of that of cell production, consequently unripe cells are forced into the circulation before they have had opportunity to extrude their nuclei.

Bacteriæmia.—A study of smeared blood for bacteria is, as a rule, extremely unsatisfactory, and while the detection of bacteria in such specimens is a valuable evidence, failure to find such organisms would be practically no evidence of their non-existence in the patient's blood. *In well-marked* cases of anthrax the bacillus of this disease is ordinarily present in the peripheral circulation. There are other more practical means for the detection of bacteria in the blood and, therefore, smear preparations are but seldom used for this purpose.

Differential Leucocyte Count.—Next in importance to the degenerative process present in the red cell is the clinical evidence obtained by a differential count of the leucocytes present. *The tendency* is rather great for the clinician to request that a differential count of the leucocytes be made only in those cases showing leucocytosis, yet I am quite firm in the belief that a differential count is of equal value even though the number of leucocytes does not exceed that of the normal.

Those chronic diseases where leucocytosis figures prominently are best represented by leukæmia, and in this essential blood-disease a differential analysis of the leucocytes present is necessary for diagnosis. *Should the type* of leukæmia in question be myelogenic (splenomegaly), the percentage of polynuclear cells will be greatly decreased and there is likely to be a corresponding proportion of myelocytes, the myelocytes varying from 15 to 80 and even 90 per cent. of the entire number of leucocytes present. *In the lymphatic* type of leukæmia there is a predominance in lymphocytes, and in mixed leukæmia the lymphocytes are increased and myelocytes present in a high proportion, while the polynuclear elements are greatly diminished.

Of the acute infections pneumonia serves as the most typical disease, and here, in addition to an increase to the number of leucocytes, the proportionate number of polynuclear cells will be found above that of the normal. *In acute sepsis* and acute inflammations, such as is seen following surgical operations with accidental infection, the percentage of polynuclear cells is also far above the normal; but should the pus be retained within the body and still be so

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walled off (encapsulated) as to prevent the product of the causal bacteria from gaining entrance into the circulation, no such effect would be present. *A differential leucocyte* count showing an increase in the percentage of polynuclear cells might, in selected cases, point rather strongly toward the presence of pus; but the absence of such proportioned abnormality in the leucocytes could not be taken as positive evidence that pus did not exist, and it is this reason particularly that makes a leucocyte count of practically little value in connection with acute appendicitis, and other inflammatory or suppurative conditions. *Again, pus may* involve the mucous surface of the body, either that of the intestines or the bladder without materially disturbing the proportionate relation of the leucocytes; and it may be said in this connection, for want of further space for explanation, that an analysis of the leucocytes present is of value only to the surgeon when he considers it as but a single symptom in the disease in question, and weighs such evidence correlatively with the other clinical features presented. *I have made special* emphasis at this particular point because surgeons often expect, through a laboratory analysis, to obtain evidence sufficient to put aside other clinical features which have been found of great value in diagnosis.

Among the chronic conditions where a differential count of the leucocytes is of clinical importance should be considered glandular tuberculosis and malnutrition of infants and those before the time of puberty, in all of which conditions the percentage of lymphocytes is appreciably increased, and this increase is usually accompanied by a corresponding loss in the percentage of polynuclear elements. The degree of malnutrition is approximately estimated, through a differential count of the leucocytes in these diseases where, as a rule, the number of leucocytes per cubic millimeter does not exceed the normal.

In certain chronic afebrile conditions affecting the liver, we also find the number of lymphocytes proportionately increased, and in wasting diseases this feature is often prominent. *A recent analysis* of the blood from several cases of melancholia has shown that in this disease lymphocytes obtain during the acute stage. In melancholia the eosinophiles are apt to be above the normal, and the theory is offered that the percentage of eosinophiles is usually increased in cases of auto-intoxication; yet there is scarcely sufficient evidence to justify accepting this statement as authentic.

The eosinophilic cells are increased in many maladies, and they may be greatly increased where the number of leucocytes per cubic millimeter is also below the normal, a feature of uncinariasis, trichinosis, and other types of infection with animal parasites.

Basophiles.—The conditions in which I have found many basophilic leucocytes present in the blood have been so few that from my own experience I have been unable to draw any clinical deductions.

Nucleated Red Cells.—The estimation of the number of nucleated red cells per cubic millimeter in the circulating blood can only be accomplished where we have, in addition to the smeared blood, a knowledge of the number of white cells per cubic millimeter, and given this additional factor the estimation is quite easy, as shown by the accompanying scheme:—

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Let A = number of leucocytes counted, or..... 600
Let B = number of nucleated red cells seen when making such count, or 10
Let C = number of leucocytes per cubic millimeter.....12,000

$$C \text{ or } 12{,}000 \times \frac{B \text{ or } 10}{A \text{ or } 600} = 200,$$

the number of nucleated red cells in one cubic millimeter of undiluted blood.

Editorial

THE BREEDING OF FLIES.

In a summary report by Dr. Hamer, of the London County Council, on the fly nuisance, according to his investigation, he concludes that the most productive of all factors in the fly genesis are accumulations of horse manure; but all collections of dust and other refuse act as breeding grounds, though less actively, and promote fly nuisance in their neighborhood. He observed that such refuse placed over two hundred yards away from dwellings, distinctly influences the number of flies that may haunt the houses.

His investigations also clearly and scientifically corroborated the common belief that children, dirty walls and ceilings, particles of food on the floor and in the sinks, are particularly congenial to flies and influences them to haunt such places.

His method of investigation consisted in selecting stations in the neighborhood of twelve premises such as cowhouses, stables, manure, depots, a jam factory, a knacker's yard, and a place where catgut was manufactured. Ordinary dwelling houses inhabited by working people, two fifty yards and two two hundred yards away, were selected as stations. In these houses squares of paper smeared with honey gum were suspended at a definite height, collected at definite intervals, and calculations made of the number of flies caught.

This report again emphasizes the fact that the house-fly lives its larval life almost exclusively in animal dejecta, especially in horse manure, and in its complete larval form carries disease germs in a passive way.

Laboratory experiments have clearly demonstrated that the house-fly is capable of disseminating the germs of zymotic diarrhœa, typhoid fever, tuberculosis, Asiatic cholera, etc. A fly contaminated with the germs of any of the above-named diseases may carry the infection for a considerable distance and remain infectious for a comparatively long time. It has been shown that flies may carry the typhoid bacillus in a living condition for over two weeks. Experiments have proven that the typhoid bacillus may pass through the intestinal tract of a fly and remain alive; hence the danger of the fly spot. The tubercle bacillus is another germ that has been found alive in the intestinal tract of the house-fly. The flies become infected by eating the sputum of tubercular patients.

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Flies are not as dangerous to disseminate disease by carrying the germs alive in their bodies as they are dangerous by carrying the germs in their hairy feet, which are particularly adapted for picking up germs and thus conveying them to the food of healthy persons. They settle on the dejecta of patients, crawling over the patient or the soiled linen, and thus pick up the germs and become a potent medium in disseminating, especially the diseases previously mentioned.

The moral to be learned from this lesson is that flies are a source of great danger to the welfare of healthy individuals; that they should be kept away entirely from foodstuffs, and all possible breeding places for them should be avoided near dwellings. In fact, the value of flies is nil, except for their ability of pestering man and beast.

DISPENSING OF POISONS.

MUCH has been written on this subject, yet we can never sound the note of warning too often, especially to those whose experience with the handling of active poisons has been limited. The possible danger of carelessly handling and having vials containing active poisons mixed with other vials containing drugs is great, no matter who handles them, for no one is infallible.

The writer, only a few days ago, had the painful experience to administer antidotes to a young physician who had taken fifteen grains of bichloride of mercury, tablet form, in a mistake for lithium tablets.

He being of a rheumatic diathesis and his kidneys being somewhat inactive, he was in the habit of taking two lithium tablets in a glass of water before retiring. During the day he had bought at the drug store bichloride tablets which were dispensed in a vial which was almost identical with the vial containing the lithium tablets. He placed the vial containing the bichloride on the same shelf with the lithium vial, and that evening he dissolved two bichloride tablets in a glass of water, thinking he had the lithium without reading the label, and did not discover his error until he had all of the solution in his stomach.

This was, of course, a bad and painful mistake on part of the doctor, but had the bichloride been dispensed in a special "poison bottle," he would at once have discovered his error as soon as he touched the bottle. *All* poisons should be dispensed in rough and colored bottles so that they could be distinguished readily at night by the touch of the hand.

It is true that every one should always read the label before taking any medicine, but why not have double precaution when no expense or even energy is required to give us such protection.

It would also be better to have all bichloride solutions and tablets colored with methylene blue, which has no influence on the antiseptic and germicidal properties of the mercury.

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Materia Medica and Therapeutics.

ALUM IN IVY POISONING.

Dr. Charles W. Reynolds, after employing many different drugs without avail in rhus poisoning on his own person, decided to use alum. Moistening the skin of the arms and legs, as well as the hands, he rubbed a cake of alum over the same, taking particular pains to scrape off the tops of the little "blisters," while he was enjoying the scratching process. He got relief from the desire to scratch in about ten minutes. The rash disappeared in two or three days.

With this experience, on his next exposure to the ivy, he proceeded to rub alum, the skin being moistened. He had only a few spots of irritation in his third and fourth attacks, all drying up in two days, and no inconvenience from the same.

This season, so far, he has pulled more poison ivy than in all of his last season's "success," with only two or three little spots to show for it. Before starting out on his jaunt, he rubs the alum over his face, neck, and arms. On his return he washed with sapolio, using a brush, then plain water, followed by the alum. Last year he did not use anything except the alum, and was as free of any bad effects as he has been this year. (The Lancet-Clinic, May 9, 1908.)

ARSEN-TRIFERROL: A NEW IRON AND ARSENIC PREPARATION.

A new arsenic and iron preparation, called "arsen-triferrol," has been prepared by E. Salkowski from paranucleinic acid. The advantage is claimed for it that it holds the arsenic and iron in loose combination, so that both are readily given off after ingestion. Animal experiments showed that both metals could be detected in the urine very soon after administration. Clinical tests are being made; up to the present the patients have readily taken the drug, and have been remarkably benefited by it. (Berlin klin. Woch., Jan. 27, 1908).

BELLADONNA POISONING FROM LINIMENTUM BELLADONNÆ.

Dr. H. Knight Rayson reports a case of belladonna poisoning in a perfectly healthy male, aged 30 years, by the local application of belladonna liniment rubbed into the back for muscular rheumatism. The quantity used was three drams, and one hour later he was quite off his head and remained so during the night, getting no sleep whatever. The patient was lying in bed with a startled, hunted expression upon his face, eyes bright and shining, pupils widely dilated, mumbling and muttering speech, dry tongue and skin, trembling lips and hands, delirious, pulse 120 compressible and running. He vomited several times, contents undigested food. After bowels and kidneys were made to act well and opium gave him some sleep, he began to improve. Hypodermic injections of pilocarpine nitras had an excellent effect in quieting the pulse and making him more comfortable. That night the head symptoms were much better, and in two days he was practically well, the muscular pains having also departed. (British Medical, April 25, 1908.)

BROMINE VAPOR IN WHOOPING-COUGH.

Dr. W. R. Schottin, after experimenting on himself by sleeping for three nights in a room in which bromine

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vapor was evolved, tried the effect of this vapor on children suffering from whooping-cough. Since the spring of 1892 Schottin has exposed these patients to the vapor of bromine for two or three hours, morning and evening, and also allows them to sleep in it. Under this treatment the attacks lessen in frequency and violence by about one-half in five to eight days, and after three or four weeks disappear entirely, without relapse. As it is not always easy to procure bromine vapor, especially in small places, and as it is also a dangerous drug in the hands of the general public, a substance has been prepared, called bromotussin, the vapor given off from which lessens the cough in three, or in some cases, two days. Schottin has been unable to collect accurate statistics as to its effect on the number of attacks. Notes of three cases are given, one complicated with bronchitis, and one with pneumonia. Cure resulted in two to five weeks. The author finds the treatment of whooping-cough now as satisfactory as it formerly was troublesome. (British Medical, May 9, 1908.)

CALCIUM: ITS ANTAGONISTIC ACTION ON THE EFFECTS OF MAGNESIUM.

Drs. Meltzer and Auer found that calcium injected intravenously antagonizes the inhibitory and paralyzing actions of magnesium, restoring the unconscious and paralyzed animal to normal activity after fatal doses of magnesium salts, unless the dose of the magnesium salt has been very large. Calcium efficiently antagonizes the abnormal activity of its three inorganic associates in the animal body, magnesium, potassium and sodium, whether the abnormal action shows itself as over-inhibition or as over-excitation. The antagonism of calcium to magnesium is a phenomenon common to animals and plants. The facts, as known at present, are still in harmony with the theory that magnesium favors essentially inhibitory processes in the animal body. (American Journal of Physiology, May, 1908).

CALMETTE'S TUBERCULIN TEST IN 210 ASYLUM PATIENTS.

Dr. James P. Sturrock applied the Calmette test to 210 patients in the Midlothian and Peebles asylum. In performing the test he left out every patient where struggles or excitement was likely to interfere with the proper application of the tuberculin to the eye. He selected only those whose eyes were healthy. The 210 patients constituted 80 per cent. of the total paupers resident. At the time there was only one case of active phthisis. This girl, tested with a solution of 1 in 150, gave the reaction in three hours. There were also four cases where the patients had during the past two years suffered from active pulmonary tuberculosis, but all were in a quiescent state and in good condition after prolonged open-air treatment. All four reacted to a 1 in 150 solution. Of the others 91 patients gave a positive reaction. He says that many of these were undoubtedly of poor nutrition but none of them as yet have furnished any other proofs of tubercle.

One hundred cases were tested with the 1 in 150 solution, the remaining 110 with solutions varying in strength from 1 to 300 to 1 in 700. Taken in batches of 25 for each particular solution it was found that there was a slightly reduced proportion of positive reactions as the solution was weakened. In the batch tested with 1 in 700 there were six positive reactions; two of these in very healthy persons were the most violent reactions of all the cases. He states that if the best be reliable it cannot anywhere be of such service as in an

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asylum where the symptoms of tubercle like those of other diseases are often more obscure than usual and where early separation of the affected cases is so desirable. This asylum has had for years the reputation of being singularly free from tubercle, though in the past year the death-rate from phthisis has gone up, but a proportion of nearly 50 per cent. of positive reactions to the Calmette test suggests either a serious condition of affairs here or a want of reliability in the test. "It would be rash in view of other experiments performed by specialists to accept the latter theory and so it seems to me that it is not verandahs or sanatoria for consumptive patients alone that we so much need as a general extension of the system of open-air treatment of all the insane." (The Lancet, London, April 4, 1908).

ERGOT, POTASSIUM IODIDE, AND SODIUM SALICYLATE, THEIR EFFECTS UPON THE EAR.

Dr. G. B. McAuliffe, of New York, reports a case in which potassium iodide caused deafness and tinnitus. Recovery was imperfect, which he considers was due to the formation of an exudate in the fossula ovalis. He advises against the reckless use of potassium iodide in aural disease, as any idiosyncracy of the patient is hard to pre-determine. He also reports cases of aural pain relieved by salicylate of soda, and of aural fibrosis apparently benefited by ergot. (Journal of the American Medical Association, May 2, 1908.)

ESSENCE OF CINNAMON IN INFLUENZA

Dr. Ross, *La Semaine Medicale,* successfully employed this drug in reducing pyrexia and asthenia, and recommends that it be given as follows: Twelve-drop doses in water and a second and third dose being administered in one and two hours respectively. Two hours after the third dose give ten drops and continue this every two hours. When the pyrexia has disappeared it is sufficient to administer ten drops three times a day for the following day or two. This treatment, if undertaken at the onset, say the first three or four hours, seems to abort the disease, at least the hyperæmia, in twelve hours. If the treatment is inaugurated at a later stage the temperature does not become normal till twenty-four to thirty hours. This medication modifies the asthenia to such a degree that the patient may, if necessary, go out and attend to business on the second or third day. However, it is wiser to wait till there has been two or three days of absence of fever. The timely administration of the essence of cinnamon considerably reduces the duration of the fever and asthenia of this disease, which conditions usually last from four to eight days, and the asthenia frequently much longer. The preparation should be made from the bark, that from the leaves being much less efficient. (The Lancet-Clinic, April 11, 1908).

FIBROLYSIN: ITS INSTALLATION INTO THE CONJUNCTIVAL SAC.

Dr. Windmüller (Med. Klin., March 1, 1908) reports his success with fibrolysin, a compound of thiosinamine and sodium salicylate, in various eye affections since June, 1907. He found the most noteworthy results in cases of corneal opacity, whether of an inflammatory or non-inflammatory kind. He begins only when all inflammatory signs have disappeared, and instils dionine immediately before the fibrolysin, in order to increase the absorptive power of the eyeball. He uses the drops once to three times daily, and increases the strength

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of the dionine solution gradually from 2 per cent. to 10 per cent. The instillation causes pricking pain, which, however, soon passes off on rapid blinking of the eyelids. The result is a disappearance, or, in severe cases, a lessening of the opacity, and, in some cases, a corresponding improvement in the visual acuity. Fibrolysin must be used while fresh. (British Medical, April 25, 1908.)

HEXAMETHYLENAMIN: ITS EXCRETION IN THE BILE AND PANCREATIC JUICE.

Dr. S. W. Crow made a number of interesting experiments with this drug upon animals and human subjects and thus gives the following conclusions:

1. After its administration by mouth, hexamethylenamin appears in the bile and pancreatic juice of dogs. It finds its way into the bile both through the liver and through the wall of the gall-bladder. 2. It has been demonstrated in the bile, cerebrospinal fluid, synovial fluid, saliva, pleural effusion and blood of man. 3. When given in sufficiently large doses (75 gr. per diem) it appears in the bile in quantities which suffice to exercise a decided bactericidal action. These experimental findings indicate that utropin will probably be of efficiency in the following conditions: acute infections of the gall-bladder; convalescence from typhoid fever, either as a prophylactic measure against the formation of gall-stones, or for the purpose of sterilizing the gall-bladder, and before gall-bladder operations as a prophylactic measure. Observations on four cases of cholecystitis were very satisfactory. (Johns Hopkins Medical Bulletin, April, 1908).

HIGH ALTITUDE IN THE TREATMENT OF BASEDOW'S DISEASE.

Dr. Stiller, (Medizin klinik. 1 März, 1908) on the urgent entreaty of his patient's husband to suggest some treatment in an apparently hopeless case, advised, as a desperate resource, that he should take her to a high altitude. They went to Schmeck, in the Carpathians, 1,000 metres high. On her return, the patient was, though grown grey, thin and fresh, without dropsy and cured of the disease. She lived for fifteen years longer and died of another disease. This success encouraged Stiller to try the same treatment in other cases, and he had in every case a like satisfactory result. Eulenberg expressed a doubt as to whether Basedow's disease was ever cured; his opinion was based on the observation of 800 cases. Stiller, in his incomparably fewer cases, has seen, as a consequence of living in a high altitude, quite a number of definite cures, and he has rarely failed to obtain significant improvement. The stay in the mountains should be for several months, and should be repeated for several years in order to establish the good result. The author is uncertain in what way the air acts. He has the impression that this treatment is better adapted for dropsical patients than for long-standing cases with compensation. Stiller considers that, in recent cases, operation should certainly be replaced by residence in high altitudes. He throws out a query if perhaps cardiac diseases of other types in an uncompensated stage may not perhaps be benefited by a high altitude, instead of, as has always been supposed, made worse. (British Medical, April 18, 1908).

HIGH FREQUENCY CURRENTS IN CONSTIPATION.

Drs. Fleig and Frenkel in treating hæmorrhoids, anal fissures and fistula with high frequency currents readily observed that constipation in all of the cases was rapidly and markedly improved in a

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comparatively short time. The application was unipolar, 110 volts, the electrode being either single or conical, according to the tolerance of the patient. The intensity of the current was gradually increased and diminished during each sitting, lasting from five to eighteen minutes, and varying in number from eight to fifteen. In three cases of mucomembranous colitis the current was applied by means of one electrode on the abdomen and the other in the rectum, with the result that the two cases were completely cured and a third materially improved, the number of sittings being respectively eight, sixteen and twenty. The great advantages of the treatment appear to be the rapid improvement of the general condition, and the absence of pain during the sittings. (The Lancet-Clinic, April 11, 1908).

HYDRARGYRI CUM CRETA IN THE TREATMENT OF SMALL-POX.

Dr. V. B. Nesfield was led to employ hydrargyri cum creta in small-pox, owing to the striking resemblance it bears acute secondary syphilis, and employed it in 8 cases. The first case was that of a boy, aged 12 years; he was sent from a mission school on the first sign of the disease. His face, arms, and legs were thickly covered with typical small-pox papules, which were present also on his scalp and the palms of his feet and hands. On the face the papules were so closely situated as to be almost contiguous. No vaccination marks were present; the case would be described as a severe one. He was given 5 grains of mercury with chalk three times a day for six days, then twice a day for the next four days, and once a day for the next three days. Sweet oil was used to soften the skin. The diet consisted of four pints of milk a day. The course of the disease turned out to be very mild, though from the first appearances it threatened to be very severe. The temperature never rose above 103° F., and the papules did not suppurate and break down. There was no diarrhœa or sign of mercurialism. The remaining seven (six were sepoys and followers) were typical cases of small-pox, all were more than moderately severe, and all were seen very early. The treatment in all seven consisted of 10 grains of mercury with chalk three times a day for six days, then twice a day for four days, and once a day for four more days, fourteen days in all. Sweet oil was used to soften the skin; no other medicine was given. The diet consisted of four pints of milk per day, and in addition four ounces of arrowroot and two of sugar when the temperature reached normal. There was never any sign of mercury poisoning and no diarrhœa. The mercury seemed to have a marked influence in lowering the temperature and in modifying the course and subsequent fate of the papules in that no active suppuration occurred and the disease was both cut short and simplified, leaving the patient almost entirely free from scars or pits. (The Lancet, April 25, 1908.)

MAGNESIUM SULPHATE FOR ENDOMETRITIS.

Dr. C. J. Wallace, (Wisconsin Medical Journal), reports good results with magnesium sulphate in the treatment of endometritis. He pours an ounce of the remedy in crystals into the vagina and confines it there till by osmosis it causes a free discharge from the pelvic tissues. This, if repeated daily for one week, will reduce a large, spongy uterus to normal dimensions. (Medical Fortnightly, April 21, 1908).

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METHYLENE BLUE FOR CRACKED NIPPLES.

Dr. Dresh (in the Gazette Médicale de Paris) states that he employs a 3-per-cent. solution of methylene blue as a topical application to the nipples, during nursing, in order to prevent and cure fissures or excoriations. The results are alleged to be excellent; the method is convenient, economical, and does not require any precautions as to nursing. The procedure is as follows: Both the nipples and the mouth of the child are washed with a warm solution of sodium bicarbonate (2 per cent.). Then, with a piece of absorbent cotton on a probe, the solution of methylene blue is to be applied to the nipples. This is best done immediately after nursing, when the nipples are at the maximum of erectility. The methylene blue has a local anæsthetic effect, and also is an agent that is very favorable to keratinization, the latter being of considerable importance in an organ which is constantly being macerated with saliva and the milk. The infant nurses from the nipples without showing inconvenience or the slightest disgust. Its mouth becomes discolored with the blue stain, but the urine is not sufficiently discolored to stain the napkins, although it may contain traces, but this is of no importance. Daily applications for a week or ten days usually suffices to effect the cure. (Medical Standard, May, 1908).

NITROGENOUS METABOLISM IN EPILEPSY.

A. J. Rosanoff, Kings Park, N. Y., reports experiments undertaken to determine whether or not in epilepsy the excretion of ammonium salts in the urine varies in any way from that in health, and if so, whether or not the variations bear any relation to the seizures. The object was not to estimate the total amount of ammonia excreted in twenty-four hours, but to determine how the rate of excretion varies immediately before and after seizures. Seven cases of idiopathic epilepsy were selected for the investigation; samples of urine were taken at two-hour intervals and put away separately in a refrigerator, with a few crystals of thymol to prevent putrefaction. When a seizure occurred, all were thrown out, with the exception of the last one or two which were analyzed. The urine passed immediately after the attack was also thrown out, as it was largely that secreted before the seizure, but that obtained from one-half to two hours after was saved and analyzed. The total nitrogen was estimated by Kjeldahl's method. Folin's method was used for the estimation of ammonia, only modified by allowing the air current to pass through the urine for six hours instead of an hour and a half. The results obtained show that the ratio of ammonia to the total nitrogen varies much more in epileptics than in normal individuals, and that the variations bear a constant relation to the seizures. Immediately before a seizure this ratio corresponds to the normal, while immediately after an attack or series of attacks, this ratio invariably rises, often far above the normal standard. He found no exception to this in the cases studied. Folin found that in normal individuals the greatest was 1.3 per cent., while the average was less than 1 per cent. In Rosanoff's cases the variation ranged from 1.1 per cent. (only two specimens examined) to 4.7 per cent. He does not venture to offer conclusions other than that it can now be considered firmly established that nitrogenous metabolism as it occurs in epileptics, presents definite

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and striking variations from the normal, and that these variations occur in constant connection with the seizures. (Journal of the American Medical Association, April 11, 1908.)

NITROGLYCERIN IN NEURITIS.

Dr. Stevenson reports thirty two cases of neuritis treated with nitroglycerin after the method suggested by Krauss of Buffalo. Beginning with $\frac{1}{100}$ of a grain every eight hours the interval was reduced one hour in every twenty-four until the full physiologic action of the drug was manifest, or the patient was taking $\frac{1}{100}$ of a grain every three hours, at which interval it was continued. Sodium bromide controls the flushing and headache. In acute cases the effect was marked within forty-eight hours. In chronic cases, ammonium and potassium iodid in progressively increasing doses hastened the action of the nitroglycerin. The actual cautery was also used over the nerve. (Medical Record, May, 1908).

NORMAL SERUM.

Dr. Hart reports a number of cases in which the normal serum was employed to combat the ulceration and destruction of tissue that characterize many diseases, and which are supposed to be due to a deficiency in the patient's serum of bodies that normally restrain autolysis. The patients are remarkable illustrations of the inhibiting power of the serum. Hart thinks the action of the normal serum would be the sum of the two opposing actions of an antilytic and anpilytic body. (British Medical, April 11, 1908.)

OPSONIC INDEX.

Dr. Paullin in a report, considers the practicability and feasibility of determining the opsonic index in reference to the administration of vaccines. He gives the results of his own investigations, which have led him practically to abandon the determination of the index(and he is satisfied that observation of the clinical condition of the patient is often enough to show whether administration of the vaccine is necessary or not. His experience with vaccine therapy amounts to about 50 cases of tuberculous lymph glands, tuberculosis of bone and skin, furunculosis, chronic empyema, chronic pustular acne, and chronic gonorrheal arthritis, in which he has administered vaccines without determining the index. The improvement has been marked, and he holds that the administration of vaccines can be carried out as satisfactorily without as with the determination of the opsonic index. (Atlanta Journal-Record of Medicine, April, 1908).

OXYGEN: ITS SUBCUTANEOUS INJECTION IN NEURALGIA.

Dr. Sicuriani (Gazzetta degli Ospedali, March 22, 1908) reports 17 cases of neuralgia, mostly old inveterate sciatica, in which a cure was obtained by subcutaneous injection of oxygen. All but one of the patients were men between 25 and 75, and 11 had had simple primary sciatica for from one to twelve months, the pain being so severe that none was able to work. All had the usual painful points and Lasegue's sign, that is, pain when the leg, held stiff, was raised horizontally and subsidence of the pain when the thigh was flexed on the pelvis with the knee flexed. These patients were all cured in the course of fifteen days with from six to ten applications of the oxygen, injecting each time about 300 cubic centimeters (10 ounces). The oxygen abolishes the pain completely, while improving the nutrition of the parts and the general metabo-

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lism. Its application is simple and inexpensive. Of course, when the pain is due to mechanical compression, this must be removed before the oxygen can exert its effect. About a year ago Massalongo reported the cure in one month of 9 patients with severe sciatica with from ten to twelve injections of from 250 to 500 cubic centimeters (8 to 16 ounces) of oxygen each. Eleven other patients were cured in the course of two months. Bernabei has been proclaiming the advantages of this "oxygen hypodermoemphysema," as he calls it, since 1902, expatiating on its threefold action, hematogenic, dynamogenic, and metabolic. This communication issues from his clinic at Siena. (Journal of the American Medical Association, May 9, 1908.)

PARAFFIN SPLINTS IN PROLAPSE OF THE RECTUM IN CHILDREN.

Dr. Kephallinos, (Jahrbuch für kinderheikunde, Berlin, March, vol. lxvii, No. 3), reports the successful use of paraffin injection after the prolapse has been reduced. The injections are made on each side, drawing out the needle as the paraffin is injected so that a long strip of the paraffin is left in the tissues, forming as it solidifies two straight sticks or splints in the pararectal tissue. This holds the walls stiff and obviates all tendency to prolapse. The paraffin is injected under ether. The needle is introduced about 1 centimetre outward and backward from the rectum and it is pushed upward in the pararectal tissue as high as possible, or the paraffin can be injected at two or three points on each side of the rectum. This forms solid rods supporting the rectal walls. The child is kept in bed two days and then discharged. He has thus treated thirty-two patients and states that the results have been satisfactory in every instance. In one case, however, about a year later, the wall became abraded and scraps of paraffin worked their way through and were voided in the stools, but the dense growth of connective tissue around the paraffin has rendered the wall permanently unyielding so there has been no recurrence of the prolapse or other disturbance. There was recurrence in one case in which a single injection had been made; the paraffin splint had evidently bent at a weak point. The first cases date from 1903, and the patients have all been re-examined since. (Journal of the American Medical Association, April 25, 1908).

PSYCHOTHERAPY.

Dr. Beatrice M. Hinkle, of New York, writing on this subject, states that hypnosis is essential in many patients in whom psychotherapy is employed, while others are persuadable in the waking state, and consequently individual treatment must be employed to achieve success. She thinks most persons are, to a greater or less extent, suggestible; but it is also true that persons vary greatly in their degree of suggestibility. She does not accept it as a fact that the Americans are less suggestible than Europeans, and she follows Bernheim and Liebault largely in her methods, also imitating Bramwell in giving the intelligent patient a preliminary explanation of what she expects, the probable sensations they will experience, and the fact that sleep, as generally understood, is not necessary in order to experience the benefit of the treatment. There are two types of patients: those who are afraid they will go to sleep, and those who are afraid they will not. The former can generally be satisfied with a few explanations; the latter are more likely to be difficult, as they may have a fixed idea that sleep is essential, an idea which will

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counteract the physician's suggestions. In a few cases in which reasoning failed she has used hypnotic drugs to reinforce the verbal suggestion, but she advises against this as a rule. Three cases are reported and she calls attention to the fact that in all three all possible physical means had been tried for a long time without result. One of the cases was of psychasthenia of a strongly obsessive type, another of spasm of the œsophagus, and another of simple insomnia. The first two were treated by hypnotic suggestion, and the latter by suggestion without hypnosis, all with success in relieving the symptoms. (Journal of the American Medical Association, May 9, 1908.)

SAIODINE IN THE TREATMENT OF SYPHILIS.

Benassi (Gazz. degli Osped., March 1, 1908) has been testing the value of saiodine in the treatment of secondary and tertiary syphilitic lesions. It was tried in about 50 cases, but it was only possible to watch the effect for any length of time in 22 cases (8 tertiary and 14 secondary). The drug is a compound of iodine (26 per cent.) and calcium (4.1 per cent.), and has the formula $(C_{22}H_{42}O_2I)_2Ca$. It is an absolutely odorless and tasteless powder, and insoluble in water. The usual dose is 1 grain, given in a cachet. The author found saiodine a good substitute for potassium iodide and the alkaline iodides. It acts quite as well, and in some cases even better, than iodide of potassium, and can be tolerated in larger doses; no iodism was observed even in patients suffering from gastric disorder and under large doses. It may be used where one usually prescribes the iodide. It is best tolerated when given at or just after a meal. (British Medical, May 2, 1908.)

SODIUM CHLORIDE: ITS ELIMINATION IN KIDNEY AFFECTIONS.

Dr. Gluzinski relates a number of cases of kidney affections which were diagnosed by the retention of sodium chloride, the urine contained no trace of the salt while a peculiar uræmia syndrome was observed. Other symptoms such as great depression, with vomiting and progressively increasing proportions of hydrochloric acid in the vomit, excessive thirst, no muscular pains or headache, with the mind clear, came on gradually. This "achloric uræmia" may gradually subside in the course of a few days and the patient recover, or it may progress with increasing weakness, agitation and loss of consciousness, and terminate fatally without convulsions, as occurred in one of his cases in three weeks, the patient, a man of 60 with arteriosclerosis of the renal vessels and chronic interstitial nephritis. Before acute nephritis manifests itself by the usual signs it may be possible to detect its development by the general weakness, vomiting, traces of œdema, retention of sodium chlorid, reduction in amount and cloudiness of the urine, with tube casts and red corpuscles in the urine, but no albumin for the time being. Systematic examination of the urine during convalescence from scarlet fever would reveal this incipient phase of nephritis. It is probably the manifestation of acute parenchymatous degeneration, and retention of sodium chlorid is the first sign. (Wiener klinische Wochenschrift, Apr. 2, vol xxi).

SODIUM NITRITE AND AMYL NITRITE IN HÆMORRHAGE.

Dr. Campani, (Gazetta degli Ospedali, Milan), attributes hæmoptysis to a combined irritability of the blood-vessels and an increased blood-pressure. The condi-

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tions are approximately the same as in the menstrual molimen—temporary vascular erethism and hypertension. Both these factors can be controlled by drugs which reduce the erethism and blood-pressure, and among these sodium and amyl nitrite—which have been found so useful in the analogous disturbances of arteriosclerosis—take the lead. He found that the two nitrites have about the same action, but amyl nitrite acts almost instantaneously, while sodium nitrite, by the mouth, does not make its effect felt for 15 or 20 minutes, but it is more prolonged, lasting for nearly four hours. The drug, he thinks, acts on the entire vascular system, but with special force on the largest arteries; in consequence of which the blood accumulates in them, draining the periphery to a certain extent. This explains the accentuation of the second aortic and pulmonary sounds noted in tests on himself, the carotid pulsation and the comparative anemia at the periphery. Soulier was able to excise pieces of lung tissue in rabbits, after inhalation of amyl nitrite, without the loss of a drop of blood. It seems probable that the nitrites might also act effectually on certain other forms of peripheral hæmorrhage, epistaxis, erosions in the stomach, etc., but Campani has had no experience in this line. If the hæmoptysis occurs in consequence of rupture of a large vessel in the lungs no benefit need be expected from the nitrites. The pulse is small and weak in these colliquative cases, and the conditions directly contraindicate such energetic medication. Ice to the chest may be useful in these cases, inducing vasoconstriction in the lungs, as also sucking scraps of ice to subdue reflex irritation to cough, opiates, the patient sitting rather than reclining and refraining from speaking. He does not approve of ergot; the effect was bad in the few cases in which he has employed it. The patients with strong and tense pulse treated with the nitrites all displayed prompt benefit, even without opiates. He has had no experience with ipecac, although Dieulafoy recommends it to reduce the vascular erethism and hypertension. The influence of certain seasons was marked in some of his forty patients. One patient had bloody sputum only in January, March, May and September, recurring in these months year after year for more than twenty years. It was always preceded by certain symptoms, suggesting a hæmorrhagic aura. This patient's lungs are thickened and more or less sclerous throughout. Similar cases of seasonal recurrence have recently been published by Jansen and others, and Campani thinks that if we watch our own physiologic processes we will find certain modifications recurring according to certain seasonal or meteorologic laws, periods of feeling well being followed by periods of listlessness and pallor without apparent cause. (Journal of the American Medical Association, April 25, 1908).

STRONTIUM: ITS EFFECTS.

Drs. Meltzer and Auer in an experiment found that the effects of strontium differ strikingly from those of magnesium; it does not cause anæsthesia and does not affect sensibility and the reflexes. The paralysis which it causes develops very slowly, and only after very large doses given subcutaneously. It does not neutralize the inhibitory effect of magnesium, as calcium does, nor are its effects antagonized by calcium but rather increased. (American Journal of Physiology, May, 1908).

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SUGAR: ITS UTILIZATION.

Dr. McGuigan writes largely on this subject, and submits the following conclusions: 1. The living muscles of an animal when perfused with dextrose, levulose or galactose, cause a rapid oxidation of these sugars. 2. The results with maltose would indicate that little, if any, of it is oxidized directly by the muscle. 3. Increasing the amount of sugar in the perfused blood increases the amount oxidized. 4. Stimulation of the muscles during the perfusion increases the oxidation. 5. The perfusion of dead muscles shows practically no loss of sugar. 6. Both in living and dead tissues perfusion causes an œdematous condition. This occurs very much sooner and to a greater degree in the dead tissues. 7. The perfused liver also utilizes the common sugars. It is probable that this will hold for all glandular organs. 8. The glycogen-storing function of the liver is lost in perfusion much sooner than the sugar-destroying function. The same statement holds for the muscle. 9. The glycolysis occurring in drawn blood at 40 C. in two hours is very small in amount. (American Journal of Physiology, April, 1908.)

TOBACCO IN SURGICAL PRACTICE.

Dr. Bangs reports three cases which lead him to believe that in many instances extreme restlessness, irritability, melancholia and even symptoms simulating collapse, following operation, are due to sudden withdrawal of tobacco. Two of the patients which the author reports were strong habitués but the third was only what would be called a moderate smoker. In all three instances the symptoms were such as to cause alarm, so much so that morphin and strong stimulants were resorted to before the condition was recognized. The smoking of a cigarette was, in each instance, however, followed by prompt cessation of all symptoms. (Medical Record, May 14, 1908).

TUBERCULIN THERAPY.

Dr. Paul H. Ringer, of Asheville, N. C., claims that tuberculin is a valuable remedy in pulmonary tuberculosis; it, however, should only be employed as an adjunct to fresh air, rest, good diet, and other agents employed in modern treatment of the disease. Tuberculin may be employed in incipient cases without ulceration or bacilli in sputum; in uncomplicated, non-febrile, first and second stage cases; in fibroid cases without febrile temperature; in febrile cases in which the temperature does not drop under treatment by rest and in which fever is due to the tuberculo-toxin alone and not to mixed infection. In such cases it should be administered with the greatest caution, in infinitesimal doses at long intervals. It can also be used in advanced third-stage cases occasionally, not as a curative agent, but to aid in relieving distressing symptoms. Here its use must be guarded and the dosage most minute. It is contra-indicated when there is great emaciation or weakness in third-stage cases with mixed infection, and in hæmorrhage. It is also contra-indicated in heart disease on account of the possibility of reactions affecting compensation; in marked increase of pulse or loss of weight during its administration, and in complications, diabetes, nephritis, liver cirrhosis, or nervous diseases.

He uses eight different strengths, varying in a decimal ratio, of Denys'

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tuberculin, ranging from 0.0001 milligram to the cubic centimeter up to the undiluted product. No. 1 contains $\frac{1}{10000}$ milligram to the cubic centimeter, and is used only for febrile cases; No. 2 contains $\frac{1}{1000}$ milligram, and so on. Injections, if no reactions occur, are given twice a week; in febrile cases beginning with 0.1 cubic centimeter of the weakest solution; in non-febrile cases he begins with the next higher; in each case at first injecting only 0.1 cubic centimeter, and increase is made by 0.1 cubic centimeter each time. When solution No. 6 is reached the interval between doses should be lengthened to five days, and it should be still further lengthened with still higher doses—up to from ten days to two weeks before the maximum dose is reached. If it is reached, it will generally be well to stop the injections for a time. If no reactions occur to delay the treatment, it will take about a year to reach the maximum dose. Of course, each case will have to be considered by itself, and the physician will have to use his best judgment in each. If reactions occur the treatment may have to be suspended for the time or even smaller dosage be employed temporarily. The author finds that patients tolerating increasing doses are not so liable to exacerbations and relapses as those not so treated, and that more permanent cures result with tuberculin than when it is not used. Many patients who steadily become worse in spite of fresh air, etc., recover under tuberculin. The chronic toxæmia of the disease is astonishingly reduced with its use and symptoms, such as cough and expectoration disappear or are greatly lessened. (Journal of the American Medical Association, May 2, 1908.)

TURPENTINE IN PROPHYLAXIS AND TREATMENT OF PUERPERAL STREPTOCOCCUS INFECTION.

Dr. Fabre reports the use of turpentine in the Lyons Maternity, which is an institution used for teaching purposes, and yet the mortality is lower in the hospital than outside. He ascribes his success due to the use of essence of turpentine, stating that whether the turpentine is ingested by the mouth, absorbed through the skin, lungs, or by subcutaneous injection or introduced into the cavity of the uterus, the action is the same, namely, that of an internal non-toxic antiseptic. The organism tolerates comparatively large doses of turpentine, which has a peculiarly destructive action on the streptococcus. It also induces hyperleucocytosis and raises the opsonic power of the blood. He has found that from 4 to 10 grams (1 to 3 drachms) by the mouth, and 2 grams (30 grains) by subcutaneous injection, are small doses and practically free from danger. He has never observed any unfavorable action on the kidneys; the diuretic action is slight. Albuminuria frequently vanishes and does not reappear during the treatment. His favorable experience with 254 infected cases in 6524 confinements since 1904 has confirmed the value of the turpentine treatment to his complete satisfaction. Since last June he has been applying it systematically in prophylaxis. The results have been encouraging, the morbidity being materially reduced, as he shows by statistics and by comparison of alternating series with and without the injections. (Obstetrique, Paris, February, 1908.)

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Book Reviews.

BIER'S HYPEREMIC TREATMENT IN SURGERY, MEDICINE AND ALL THE SPECIALTIES. A Manual of Its Practical Application. By Wilby Meyer, M.D., Professor of Surgery at the New York Post-Graduate Medical School and Hospital; and Professor Victor Schmieden, Assistant to Professor Bier at Berlin University, Germany. Octavo of 209 Pages, Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.00 net.

This is a brief yet comprehensive manual on the hyperemic treatment as applied by Professor Bier at Berlin University and Germany. It contains in a nutshell the experiences gathered at Bier's clinic, where the hyperemic treatment had its birth, together with those made on American soil. The work is well written, well bound, and illustrated most elaborately. It deserves the attention of every wide-awake practitioner.

THE NERVOUS AFFLICTIONS OF THE HEART. Being the Morison Lectures Delivered Before the Royal College of Physicians of Edinburgh in 1902 and 1903. By Alexander Gibson, M.D., D. Sc. (Edin.), LL.D. (St. And.), F.R.S. (Edin.). Second Edition. Edinburgh and London: Young J. Pentland, 1905.

This little volume of ninety-nine pages takes up the clinical, pathological and therapeutical side in sensory disturbances of the heart, and rate, rhythm, force under motor disturbances of the heart. The lectures are brief, but to the point, and just the thing for the student.

THE GOOD NEIGHBOR IN THE MODERN CITY. By Mary E. Richmond, Author of "Friendly Visiting Among the Poor," General Secretary of the Philadelphia Society for Organizing Charity. Special Philadelphia Edition with References. Philadelphia and London: J. B. Lippincott, 1908.

In this little volume of one hundred and sixty pages, Miss Richmond considers the child in the city, the child at work, the adult worker, the tenant, the man on the street, the family in distress, the invalid, the contributor and the church member. The little volume is one of the most interesting of its kind we have ever seen and we take great pleasure in saying that every member of the medical profession, who wishes to read something different from the ordinary trend to which he is used, should procure a copy of this work.

DISEASES OF THE HEART AND AORTA. By Thomas E. Satterthwaite, M.D., Professor of Medicine in the New York Post-Graduate Medical School; Consulting Physician to the Post-Graduate Orthopædic and Babies' Hospitals; President of the Medical Association of the Greater City of New York. E. R. Pelton, 19 East Sixteenth Street, New York.

This volume is based on a series of articles that originally appeared in our medical periodicals, but have been revised, while new chapters have been written. The greater number of the cuts are original. Success in the diagnosis of heart diseases calls for method, thoroughness, and a proper consideration of objective and subjective symptoms. Method, however, is absolutely essential. Both positive and negative conditions should be recorded in a systematic manner. For this purpose the author has introduced a special blank into the work, a copy of which should be followed in all examinations of the heart. The work is filled with interesting matter from beginning to end and is indeed a credit to the author and publishers.

THE TREATMENT OF DISEASES. A Manual of Practical Medicine, By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital; Consulting Physician to the Nassau Hospital; Visiting Physician to St.

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Mark's Hospital; Fellow of the American Academy of Medicine; Member of the American Therapeutic Society and of the American Medical Association; Permanent Member of the Medical Society of the State of New York; Honorary Member of the Connecticut State Medical Society; Vice-Chairman of the Revision Committee of the United States Pharmacopœia, etc. Second Edition, Revised. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut Street, 1908. Price, Cloth bound, $6.00 net.

In the revision of the second edition of this work, the author has constantly kept in mind the practical needs of the physician. Dr. Wilcox is a teacher of broad experience and an author of reputation and renown. The volume contains the very latest and best ideas on the different subjects under discussion. In reviewing the different diseases discussed under Infectious Diseases, Constitutional Diseases, the Intoxications, including the Effects of Exposure to High Temperature, Diseases of the Digestive Organs and Peritoneum, Diseases of the Blood, Diseases of the Ductless Glands, Diseases of the Heart and Blood-vessels, Diseases of the Respiratory System, Diseases of the Urinary System, Diseases of the Nervous System, Parasitic Diseases, etc., we cannot help but admire the complete scientific manner in which the author takes up these diseases. Among the new subjects are: Mountain Tick Fever, Blastomycotic Infections, Methyl Alcohol Intoxication, Indicanuria, Compressed Air Disease, and the Trembles. Dr. Wilcox pays particular attention to the treatment of the various conditions under discussion, holding that while etiology and pathology of disease are both interesting and important and diagnosis absolutely essential, yet it is from a broad and well-founded knowledge of therapeutics in the larger sense that the practitioner will achieve his greatest success and win his most enduring reputation among his patients and the public at large.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and Other Topics of Interest to Students and Practitioners. By Leading Members of the Profession Throughout the World. Vol. I, Eighteenth Series, 1908. Philadelphia and London: J. B. Lippincott Company.

This handsome volume considers some very interesting articles. It tells considerable about the salient facts in the treatment of infections, constitutional diseases, etc. A beautiful figure illustrates the method of bringing out the dimpling which may be looked upon as pathognomonic of carcinoma.

This volume is undoubtedly a handy compendium of information referring to prominent persons and their doings. Among the general contents of interest are: "The Treatment of Syphilis by Intra-muscular Injection of Soluble Salts of Mercury"; "The Value of the Opsonic Test in Diagnosis." Dr. A. L. Benedict proves in his article that the theory of the tidal reaction reciprocal to the digestive secretions and in particular to the abstraction of acid factors from the blood in the formation of hydrochloric acid, seems to be purely imaginative. The author of the article on "Mucous Colitis" has indicated that the prolonged use of mineral waters in the treatment of this disease is valueless; he advocates a rectal injection of biliary extract and a carefully selected diet. Other valuable articles are: "Diseases of the Gall Bladder"; "Fixation of Abscesses"; "Care of Newborn." There is also an interesting account of the progress made in medicine during the year of 1907, telling of the many improvements in the treatment of disease.

The articles are presented in a comprehensive and clear manner untrammeled by theories and hypothetical diagrammatic representations. An endeavor has been made to lay down every principle recognizable with the tenets of anatomy and physiology.

Though the volume does not include many colored illustrations, nevertheless the illustrations are excellent and illustrate the points to be brought out very artistically. The style is clear-cut and forcible, and presents in a clear, though concise way, the important facts regarding the clinical manifestations of the disease. This volume undoubtedly will prove sufficiently interesting and beneficial to the reader.

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GENERAL MEDICINE. Of the Practical Medicine Series, under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. I. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago; and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Series 1908. Chicago: The Year Book Publishers, 40 Dearborn Street.

The subjects treated in this volume have the distinctive merit of representing the knowledge of general medicine of the present time. The value of such a work may be well illustrated by some of the chapters, namely: Diseases of the Respiratory Organs; Circulatory Organs; Blood Vessels; Blood and Blood-making Organs; General Infectious Diseases; Diseases of Ductless Glands; Metabolic Diseases and Diseases of the Kidney. These diseases are fully treated and at the same time in a concise and practical way. The author lays special stress that the importance of training in the art of physical signs should be especially emphasized, as the earliest state of tuberculosis reveals itself by auscultatory signs. A very good description of the modern methods of procedures required in the estimation of hæmoglobin, counting of corpuscles, determination of the viscosity of the blood and staining of blood is given, and the various instruments and methods required for these determinations are illustrated with excellent cuts.

The chapter on Heart Diseases discusses not only the disturbances associated directly with the heart but also those which indirectly cause disturbances. The author lays great stress on the facts which are of vital importance to the general practitioner. He firmly believes that arteriosclerosis is due to toxins circulating in the blood and presents the *theory of the mechanical action of strain* as a cause of arteriosclerosis. The subjects are taken up in a logical manner with a review of all the various tests that have been used in the past.

This book is a creditable production, treating its subjects thoroughly and therefore it deserves a wide recognition.

THE DEVELOPMENT OF OPHTHALMOLOGY IN AMERICA, 1800 TO 1870. A Contribution to Ophthalmologic History and Biography. An Address Delivered in Abstract Before the Section of Ophthalmology of the American Medical Association, June 4, 1907. Revised and Enlarged. Illustrated by Selected Portraits and Cuts. By Alvin A. Hubbell, M.D., Ph.D., Professor of Clinical Ophthalmology in the University of Buffalo, etc., Buffalo, New York. W. T. Keener & Company, 90 Wabash Avenue, Chicago, 1908.

This small volume of one hundred and ninety-seven pages is the republication of an address which had been delivered before the section of ophthalmology of the American Medical Association. The author has enlarged it considerably and has added numerous cuts and illustrations to it. Among the general contents of interest are: Factors of Development; Institutions and Surgeons; Biographical Sketches; American Ophthalmic Literature to 1850; Special American Contributions; The Pioneer Specialists; An Era of Rapid Change After 1850.

This book embodies a complete survey of American ophthalmology from 1800 to 1870, which is restricted to the United States and Canada. It discusses the rapid progress made in this important branch of medicine, the men that have been most conspicuous in the development of it and the early institutions founded by them, most of which exist at the present time. The author follows up the historical references to the early institutions for the treatment of diseases of the eye, which have contributed in various ways to the advancement of ophthalmology. He gives a biographical sketch of the early eye-surgeons, but lays special stress upon those who stood out more exclusively for ophthalmology, and discusses the various early operations such as ectropian of the lower lid, operation for blepharospasm, abscission of the cornea and the operation for divergent strabismus. It is stated by the author that the two most important American contributions which proved advantageous to ophthalmic surgery and its advancement were animal ligatures and general anæsthesia. The reader is given a brief account of the origin of the American Ophthalmological Society which united the scientific labors of American ophthalmic surgeons. The work is well arranged and covers the ground indicated by its title.—J. B. C.

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Department in charge of J. MADISON TAYLOR, A.M., M.D.

PSYCHOTHERAPY: ITS SCOPE AND LIMITATIONS.[1]

BY CHARLES K. MILLS. M.D.,
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INTRODUCTORY REMARKS.

A WAVE of increasing interest in psychic medicine appears to be passing over our country. An old, old story is being repeated by new raconteurs; an old, old subject is presented in a garb not entirely new, but with new trimmings and adornments. Religion is again offering its services not only to the sick but to the doctor, who should show at least the courtesy of some attention to those who are offering him aid. A movement which fills churches and excites the interests of a nation is deserving of discussion.

Psychic medicine and mystic medicine are terms sometimes used as if they were interchangeable. This is not the exact truth. In a certain sense mystic medicine is psychic medicine, but the reverse does not, or at least should not, hold good. In the incantations of the medicine men, of the savages, in the appeals to omens and to oracles, in the calling upon the sun and the stars to relieve the sick and the helpless, in the ministrations of Mrs. Eddy and her apostles, in the resort to healing shrines of every description, the psychic element is easily discoverable. These and other forms of mystic healing appeal to the superstition or the imagination of the individual; they play both upon his normal and abnormal suggestibility. They do this, however, not

[1] From the Department of Neurology, University of Pennsylvania. Read at the meeting of the Philadelphia County Medical Society, March 25, 1908.

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from the standpoint of the sane and scientific believer in the proper use of suggestion. They attribute cures to supernatural interferences, and in this way deceive in the very act of helping. The psychic medicine in which the doctor should be continuously interested is that in which the use of mental influence for the relief or cure of disease is resorted to on the same scientific principles as is the use of water, medicine, electricity, the surgeon's knife, or the forceps of the obstetrician.

In the brief time at my disposal I can do little more than present my personal views with regard to the methods, scope, and limitations of psychotherapy. The subject is so ancient, and if elaborately presented so extensive, that I should become wearisome if I should attempt to do more than this. On the basis of a considerable experience therefore I shall open this discussion by somewhat dogmatically presenting my conclusions regarding the utility of the different methods of psychotherapy.

What are to-day the accepted psychotherapic methods—those which have received the support of medical men of position and influence? I might say in passing that this support has varied considerably as regards both its extent and its depth. These methods are: (1) The use of hypnotic procedures; (2) the appeal to suggestibility in the waking state; and (3) the resort to educational or persuasive measures. Any one of these may be combined with other accepted therapeutic measures.

HYPNOTISM.

The subject of hypnotism never seems altogether lacking in interest for the public, both medical and lay. The treatment by suggestion of patients in whom have been artificially induced conditions of somnolence, lethargy or catalepsy has again and again attracted the attention of the profession. Nearly thirty years ago under the stimulus of the publication of the scientific, and at the same time spectacular, investigations of Charcot and Richer, I became deeply interested in hypnotism, studying the new literature, re-reading the old, and making many personal investigations and contributing papers, reviews, and chapters relating to the subject. One of my early papers illustrated by the presentation of patients in whom the phenomena of somnolence, lethargy, catalepsy, and automatism at command were exhibited, was read before this society in 1881, twenty-seven years ago. For some time I made numerous experiments with hypnosis for diagnostic and therapeutic purposes, but as time progressed my experiments with this agency grew less and less. While this is true, during the same period my respect for scientific psychotherapy increased, but this psychotherapy has its wider field of usefulness outside of the domain of hypnotism.

Science and medicine owe a large debt to Braid, Charcot, Liebault, Bernheim, Janet, Forel, and others for the light which they have thrown upon abnormal psychology and nervous phenomena in general through their studies in hypnosis, but this fact must not blind us to the possibility that evil as well as good may have come out of their investigations. Because of the brilliant results obtained by these earnest and enthusiastic scientific workers

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the profession has been led to expect too much and to overlook the unwholesomeness of hypnotic procedures when thoughtlessly or too generally used. Critically regarded, the net result in the way of addition to our therapeutic resources which has come through studies in hypnotism is not large.

Should hypnotic procedures of the sort which produce states of lethargy or catalepsy be resorted to in the cure of disease, and what is to be hoped for from their use? What harm if any may result from employing such methods? These are practical queries.

Putting the matter as briefly as possible, my experience and observation indicate that little of permanent value is to be accomplished by the production of profound hypnosis, and that it may be the means of doing no inconsiderable harm. Hypnotic procedure, however, even when used to induce profound somnambulic states, has a field of usefulness which is very limited, although it cannot be disregarded. It may be used, for instance, on the principle of two evils choosing the lesser, for the improvement of the sad condition of those amnesic and depressed hysterics described by Janet and familiar to all neurologists, who have a double or dissociated personality and live for the most part in a state of consciousness in which life is truly a burden. It can be admitted that it may be right not only to change for a time, for patients of this sort, their state of consciousness or personality, but even to allow them to remain in the artificially induced state, the second condition being better than the first or usual one. At the best however hypnotism is here only a method of making a life altogether intolerable a little more tolerable. The temporary ailments or conditions are relieved, but the degeneracy and neuropathy remain and will constantly reassert themselves.

I have seen not a few examples of the evils actually caused by hypnotic procedures, used either for amusement or for scientific and therapeutic purposes. Many years ago two of my professional friends made a series of interesting experiments on the artificial induction of convulsive seizures. They brought about their results, as I witnessed on one occasion, by placing themselves under the conditions of a spiritual seance or table rapping. With their hands placed in slight contact with the table, and their minds made as vacuous as possible, they were able to bring on conditions of catalepsy and clonic spasm. Wisely they both soon determined that they had had enough of these experiments. One of them told me that on more than one occasion, while on the street or in some public place, he had been compelled to back himself into a doorway or against some support to prevent a spasmodic attack.

A young man, intelligent and educated, of a highly sensitive nervous system, out of interest and in the spirit of accommodation, allowed himself to be used again and again by a psychologist for the purpose of exhibiting and illustrating the phenomena of hypnosis. States of lethargy, of catalepsy, and examples of automatism at command were frequently shown with this youth as the subject. Later, after entirely giving up his part in these exhibitions, this young man became a victim of hystero-epilepsy from which he had never suffered before. He did not recover until some years had passed. Hysterical phenomena brought out by suggestion under hypnosis can be evoked more

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readily the oftener the hypnotic procedures are repeated. It is always possible that the hypnosis artificially produced may initiate hysterical affections which may become chronic. I might give a considerable number of illustrations of this fact were it worth while.

In considering the possible evil effects on the individuals of repeated profound hypnotizations it is necessary to direct attention to the influence on the brain and mind of such procedures. I shall not go into any discussion of the various theories as to the state of the central nervous system in one who is hypnotized. Those desiring to dip deeply into this branch of psychological medicine cannot fail to have their interest excited, even though their intellects may not be greatly enlightened as to the physiology and pathogenesis of hypnosis, by consulting the works of Charcot, Heidenhain, Bernheim, Grasset, Janet, Forel, DuBois, and many others. The literature of hypnosis has become so voluminous as to cause embarrassment to the student of the subject. One thing is evident, namely, that when hypnosis results, through either altru-suggestion or auto-suggestion, the cerebral, or at least the psychic resistance of the individual is reduced, and repeated reductions of this sort must in time permanently diminish the psychic robustness of the individual. The second, third, and subsequent hypnotizations are usually more readily induced than the first, and a truly pathological state may eventually be established. In the language of comparatively recent psychiatry, the phenomena of hypnosis are sometimes quite lucidly expressed by the statement that the individual becomes, for the time being, the subject either of negative or of positive hallucinations, or of both. When, for instance, he is told that a chair, a table, a flower, or an individual, is no longer in the room, and believes the same to be true although they are present and in full view, and likewise when he is assured that his sciatica, his headache, or one of his limbs has disappeared and believes this, he is temporarily the victim of negative hallucinations. In like manner, when a person, an object, a change in sensation, or impairment of power, is suggested into existence by acting upon the hypnotic subject, he becomes the victim of a positive hallucination. The state of hallucination is an abnormal one, whether artificially induced or a symptom of inherited or acquired insanity, and to repeatedly reproduce abnormal psychic conditions is not in the very nature of things a procedure to be approved and encouraged.

What has thus far been said has had reference chiefly to the therapeutic value and to the harmfulness of profound hypnosis. What, if any, is the value in therapeutics of that degree of hypnosis, sometimes spoken of as somnolence or light sleep; also what harm, if any, may befall the patient from the induction of this degree of hypnosis? These questions are not so easy to answer as those which have reference to the production of real lethargy and of catalepsy. Some good authorities, Forel, for instance, would have us believe that hypnotic somnolence does not differ in essence from ordinary sleep, and therefore that one is no more deleterious than the other. Into this question I cannot go on the present occasion. Light hypnotic sleep, unless frequently repeated, is probably not productive of harm. Numerous cases of transient relief of such symptoms as headache, neuralgia, insomnia, hypochondria, tremor,

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and various hysterical stigmata, sensory, motor, and visceral, through suggestion made in light hypnosis are sufficient to give warrant to the opinion that it may sometimes be used with advantage and practically without detriment to the patient. It seems also at times to be of service in mitigating the distressing symptoms of some organic affections as, for instance, the pains of tabes. In times gone by I have successfully used suggestion given to patients in light hypnotic sleep for the relief of such symptoms as hysterical ptosis, hypesthesia, monoparesis, hemiparesis, aphonia, singultus, and vomiting. The point to be decided in such cases as these and in others which might be easily enumerated is whether the method of suggestion through hypnosis is preferable in these cases to waking suggestion, or to the use of medicinal or other material remedies. My own conviction, after considerable experimentation, is that hypnotic procedures are not to be preferred to the other methods, and that in some instances at least harm may result. It is much the same with hypnosis as it is with the use of drugs with which one has to be careful in order that a serious habit may not be initiated. Whether a drug or a hypnotic procedure does harm will depend in part upon the inherited constitution and proclivities of the patient, and in part upon the wisdom of the physician who uses either as a therapeutic implement.

SUGGESTION WITHOUT HYPNOSIS.

Until the appearance of Bernheim and the exposition of his views regarding the real nature of hypnosis, the world interested in hypnotism remained to a considerable extent under the influence of the views of those who, like Mesmer, the elder John K. Mitchell, and many others, regarded hypnotic phenomena as the result of the influence of some force like magnetism exerted from without upon the subject. After a long use of hypnotic procedures it dawned upon Bernheim that it was possible in many subjects to produce the same effects without the induction of the artificial somnambulism. Suggestion, and this alone, was necessary. With others who followed him he held what was already known to the world at large, although not clothed in scientific terms in this world, that suggestibility was the common property of the race. While the percentage of those who are not amenable to suggestion varies, according to writers on the subject, from 3 per cent. to 30 per cent., it matters little what the exact figures, all or nearly all, are suggestible. This being admitted, one practical result for the psychotherapeutist is the recognition of the truth that hypnotic procedures, known sometimes to be injurious, are in reality seldom necessary. The therapeutist must simply learn how to act upon the suggestibility of the concrete case before him.

While suggestion is potent, it is so within certain limitations. The suggester, whether priest, charlatan or scientific physician, may, by appealing to blind faith, lift the cloud or dissipate the poisonous atmosphere which surrounds the patient, but it is not always true that in doing this he effects a permanent cure. The truth is not as Du Bois expresses it, that one is cured as soon as he believes himself to be cured, but that he is cured when the conditions which have caused, and which tend to reproduce his sickness, have

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been removed. Suggestion therefore while a powerful agent for good in the hands of the wise, needs in most instances to be reinforced by the use of other measures.

With Du Bois the physician must so educate his patient as to give him an understanding of the true nature of the disorder from which he suffers and of the best methods of counteracting it; with Mitchell he must improve the nutrition by measures tending to the improvement of blood and structure; with the surgeon he must remove when possible the irritating source of direct and reflex disturbances; with the everyday physician he must skillfully and thoughtfully employ those medicinal agents which are calculated to assist in restoring and improving function.

This much may be said, when comparing the beneficial effects which result from suggestion through hypnosis and of suggestion without hypnosis, that the latter is the surer as well as the safer remedial measure.

While treating of suggestion let me say a few words which are not inappropriate to the subject in hand about the discussion which has been going on for some time, especially in Paris, regarding the pathogenesis of hysterical phenomena. Led by the ever alert Babinski on the one hand, and on the other by Raymond, the inheritor both of the mantle and of the opinions of Charcot, a battle royal progresses regarding the concept advanced by the former that all hysteria is due to suggestion and that most, if not all, hysterical phenomena can be traced to suggestive influence exerted on the patient by others. Whatever of truth this idea may contain it is not altogether correct. With Janet I incline to the view that depression and dissociation of personality play a larger rôle than direct suggestion in the production of hysterical symptoms, although it must be recognized that suggestion may enter into the induction of the hysterical phenomena which demonstrates the dissociation. Of this I am convinced by experience that suggestion by the examining physician is not the only or even the main cause of the stigmata which he finds in his patient. To take for illustration but one class of patients, again and again I have seen cases after injury, and have had the opportunity of examining them for the first time for nervous symptoms, no similar examination for the same purpose having been made. These patients have without suggestion indicated the presence of anesthesia or hypesthesia, of impaired power or impaired vision, of vomiting, tics, of localized pain or of hyperesthesia. It is true that suggestion on the part of the physician or others may increase or diminish or transfer phenomena of sensation in such patients, but that they are thus produced in the first place is another matter. By what process can disease be made to take this or that classical form in one who is utterly ignorant of the symptomatology of all disease?

While it may cause us to diverge a little from the main line of thought in the present discussion, it will not be altogether out of place to speak a little more at length on this subject of the traumatic neuroses or psychoses which have an not important place in neuropsychic medicine. The cases of injury or of alleged injury to the nervous system have become so important in the medical and economic history of our time as to have secured the close attention

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not only of medical men and jurists, but also of financiers and public administrators. I have been told that forty or fifty is not an unusual number of accidents and alleged accidents occurring daily in connection with the Rapid Transit System of Philadelphia. It is even asserted that the dividends of this and other companies are practically annulled by the amount of money required to pay for the damages resulting from such accidents. Charges of fraud, collusion, and crime are freely bandied to and fro by those who, on the one hand, accuse lawyers and physicians of assisting in procuring such damages from the innocent and suffering corporations, and on the other hand, by those who accuse these corporations of defrauding by methods of jolly, bluff, and deception, clients and patients of the just compensation for injuries received because of the negligence or carelessness of their ill-paid employees. Hysteria, neurasthenia and hystero-neurasthenia, hypesthesia, ankle clonus, irritable spine and contraction of the fields of vision are terms becoming as familiar to the claim agent and the attorney for the plaintiff and defendant as to the doctor and the student of medicine and psychology. Litigation symptoms have come to be looked upon as morbid phenomena to be reckoned with as certainly as the effects of inflammation or intoxication.

Doubtless some instances of unmitigated fraud may be found in the extensive list of traumatic cases in which suits at law are brought. It is difficult at times to discriminate between real but exaggerated and consciously or unconsciously simulated symptoms, but the experience of those with open minds shows that the majority of those who bring actions have received more or less injury and are deserving of more or less compensation. These injuries may be psychic or physical, or both; but most frequently perhaps there is a combination of local injuries with a larger and more important psychic disorder. The ankle or back under judicious treatment may soon be repaired; the dislodged kidney or uterus may be replaced by the skillful surgeon; the broken bones and even the bruised nerves may soon be healed; but the shock to the brain and nervous system, especially in those of neuropathic constitution, and these are a multitude in every community, often continues to harass the victim of injuries through and often far beyond the period of litigation.

The fact that litigation may cause an increase or a continuance in the clinical phenomena of the traumatic neuroses or psychoses is an argument in favor rather than against their reality and their importance. The speedy settlement of just claims or the recovery of just compensation after waiting may and does sometimes act as a powerful incitement to recovery. This well-known fact teaches us that in such cases, as in many other traumatic cases, psychotherapeutics may be made to play a large part. Whenever lawyers and physicians get together and in reasonable spirit co-operate in the adjustment of claims, much good is done for all concerned. A just settlement is good psychotherapy for the attorney, for the client, for the physician, and for the patient, and above all for the corporation which settles.

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EDUCATIONAL OR REASONING METHODS.

Du Bois comes to us saying that the best psychotherapeutic method is that of reasoning or persuasion, that of informing the patient as to the nature of his case and of reasoning him into the belief that it is curable, and that he (the patient) can help out this cure. This is not a new plan of curing or attempting to cure the sick. It has existed wherever good physicians have used their mental powers for their fellows. The doctor of the metropolis, of the town or of the cross roads, if one well fitted for his vocation, has successfully exercised this art of persuasion, as he has also that of appealing to blind faith. A debt however is due to Du Bois, to Prince, to Putnam, and to others working in this field for concentrating the attention of the profession on the value of persuasive or reasoning methods, and on the best way of using these for the relief of nervous ills. Methods of education and of persuasion have been illuminated, and in so far as they are more clearly seen and better understood are likely to be more largely and more efficiently employed. Suggestion probably enters into all psychotherapy, but in the educational method is more than mere suggestion.

"I have shown," says Du Bois, "that in this influence (persuasive or educational) exercised on the patients afflicted with the various functional troubles of the digestive apparatus, or the heart, or the respiratory system, there is always an element of suggestion. To arouse in the patient the conviction of cure is the fundamental indication. It is impossible for me always to keep the patient from reaching this conviction by blind faith; but the fault, if fault there be, must be imputed to the subject. Personally I take care that my statements are rationally founded; I transmit to the patient only such convictions as are based on my psychological or physiological views. I try to make the patient follow the same paths, to explain and to make him understand as clearly as possible the influence of mental representations on organic functions."

The educational method is among the most valuable of all psychotherapeutic measures. This method contemplates teaching the patient what he has, what he has not, what he seems to have, what he can do, and what he cannot do, and what he simply believes he cannot do. This expresses briefly what might be much elaborated.

In the educational method, first separating the false from the true, the real from the imaginary, the inevitable from the merely habitual, after the manner which has been advocated by Du Bois, Prince, Putnam, Taylor, and others, the patient becomes enlightened as to the real nature of his own case. He obtains this enlightenment through frequent conferences with the physician who talks to him somewhat as a physician talks to his colleague in a consultation, the method of the physician and consultant being modified in accordance with the lack of knowledge which the patient has of the anatomy and physiology necessary to a scientific understanding of the subject. The physician, so to speak, popularizes for his patient the knowledge which he possesses and which another physician would comprehend without the necessity

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of such popularization. Understanding his own symptoms and being led to a full belief in the possibility of their removal, the patient advances more easily along the path to recovery.

THE LIGHT SHED BY PSYCHIC MEDICINE UPON THE NATURE OF DISEASE.

Whatever views may be held as to the value of psychotherapy, no one familiar with the literature of psychic medicine can fail to recognize the important additions to our knowledge of the nature of disease which have come from the latter-day study of the psychological side of medicine. The enlightenment regarding diagnosis which has thus been obtained seems to us at times even greater than that with reference to treatment. We have to-day a much clearer insight than ever before into the underlying pathology not only of such so-called functional diseases as neurasthenia, hysteria, and hypochondria, but also a better appreciation of the cause of the most distressing phenomena of many of the diseases universally accepted as organic. One of the fruits of modern research into abnormal psychology has been the addition to our nosology of the disease or affection known as psychasthenia. The propagandum in favor of the acceptation of psychasthenia as a clinical entity, if it has done nothing else, has clarified our views regarding neurasthenia on the one hand, and the so-called paranoid states on the other. We have learned better to separate the mental from the physical, the incurable from the curable or relievable, and at the same time have learned to give full credit to the psychic element in our attempts to treat both neurasthenia and psychasthenia.

THE LIMITATIONS OF PSYCHOTHERAPEUTICS.

In eras of excitement and exploitation of special methods of treatment the community at large or even the profession is often carried beyond the confines of reason. It would be easy to recall many illustrations of this fact. The great but unrealized or only partially realized expectations which were evoked by such discoveries as the tubercular bacillus, diphtheroid bacillus, and the x-ray may be recalled. Even the advent of single remedies has sometimes awakened anticipations so extraordinary as scarcely to be believed in later times after such remedies have taken their real place, often a most important one. These remarks apply to such drugs as the bromides and the petroleum products, or going much farther back, to mercury, the iodides, quinine, and opium. The thousand and one remedies which have come loudly heralded and have departed leaving no trace except the memory of a dishonored language and of unbenefited patients need no reference in this connection. I am speaking rather of remedies and measures of real and permanent value.

Who does not recall the high hopes of the suffering and the unthinking which were awakened by the propaganda in favor of the remedial use of electricity—in the early days by the static machine, the galvanic pile, and the faradic coil in their then crude and clumsy forms, and in more recent times by the improved Franklinic machine with its accessory appliances, by the sinusoidal current or the currents of high tension or great frequency, by the electric vibrator and all the rest? Who does not recall the joyful anticipations

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indulged in by the very sanguine or the more or less feeble-minded when suspension was announced as a cure for sclerosis and the correction of eye-strain as the sovereign remedy for epilepsy and everything else of a neurological character which could not be reached by any other therapeutic method? Indeed some of our ophthalmological enthusiasts have I believe gone so far as to find in the correction of the errors of refraction the panacea for the ills of every refractory organ, whether in the brain, the thorax, the abdomen, or the pelvis. In the medical world remedies and therapeutic measures become the rage, just as in other worlds horse shows and bridge, bicycles or automobiles, football or stock gambling, may become the rage. The rage subsiding, a sane residuum is left, whether in medicine or in the lay world outside of it.

Coming nearer to our subject, the eras of excitement regarding mesmerism, animal magnetism or hypnotism, which at intervals would seem almost to recur like panics, under some occult law in periods of ten or twenty years, will be suggested. They have come and gone, doing little good and much harm, and leaving behind them a trail in which harm and good commingle, the former predominating. When I speak of harm and good I would limit my meaning to the matter which concerns us most in this paper, namely, that of the cure or relief of disease. Scientific results which cannot be measured in the same balance with therapeutic achievements have come from a study of hypnotic phenomena. Some years of experimentation and many years of observation have led me to the belief, already expressed in other words in this contribution, that hypnotism as a therapeutic procedure, while of some value, has its decided limitations. Psychotherapeutics, of which the practice of hypnotism for remedial purposes may be regarded as a phase, has also its decided limitations. The thoughtful physician will recognize and act upon these limitations.

On arising from the reading of some of the chapters in the book of Du Bois, one cannot help feeling either that this writer is occasionally over sanguine or mistaken in the permanence of some of his results, or else that he has powers of healing by reasoning and persuasion far exceeding those possessed by other mortals. I would not for a moment question the verity of his reports, but it has seemed to me with regard to some of them that, like the reports of cures from operations or from new medicinal remedies, sufficient time has not been allowed before recording to decide on the real merits of the treatment. It is true that he tells us of the relapses of his patients and of his occasional failures, but discounting these, his results still remain apparently so brilliant that it is hard to reconcile them with our experience, even making all allowance for the superior powers of the recorder. Take, for instance, his reports of his successes by his methods of persuasion in the treatment of insomnia and of some of the obstinate forms of tic. In these disorders, while such measures are useful as adjuvants and in rare cases efficient for radical cures, they will I believe fail even when exercised by those who most frequently from their personality or training are most capable of using them successfully.

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RELIGION AND PSYCHOTHERAPY.

It is not at all surprising that religion and the art of healing should so often be asked to clasp hands. Faith is fundamental to the existence of sects and creeds. Religious belief is the corner stone on which religious organizations are built. In medicine, as in religion, faith or belief in those who dispense the gifts of healing is often as essential as is faith to the existence of the churches. Moreover in the manner in which religion is housed and expressed and enforced suggestion in its most powerful form is exhibited. The spire, the vaulted ceilings, the painted window, the mild religious light, the robed priest, the choir, the genuflections and all the rest which go to make up religious ceremonies and surroundings are among the most powerful suggesters. The faith which has made ecstatics and stoics, which has enabled men to go smiling to the stake, could not be otherwise than a powerful agent for healing if properly applied or if applied to the proper subject.

It not infrequently happens that the doctor can appeal to the clergy for aid in some special case. Every good physician who is at all in contact with the priest or the preacher sees at times an opportunity when the latter can render a real assistance. The clergyman, on the other hand, at times can turn with advantage to the doctor in behalf of some mentally or physically disturbed or diseased member of his flock. This sort of reciprocity exercised in proper manner for individual cases is often to be commended and rarely brings about anything but good results. It is not the same however when, on the one hand, the rôle of the physician is played or attempted to be played in its entirety by the clergyman, or on the other hand—what will be more readily recognized as true—when the rôle of the clergyman is attempted to be played by the physician.

Any man or any organization proposing to deal with the cure of disease, must be prepared to meet it in its diverse guises. It is true that we have specialties and specialists in medicine—men who treat the eye, or the ear, or nose and throat, or the nervous system, but it is also true that these men must be prepared to deal with diseases of all sorts as they affect the tissues and organs of the body which they have selected for their special line of work. Those suffering from diseases, functional or organic, acute or chronic, curable or incurable, of certain organs or parts of the body, have a right to expect enlightened attention and assistance from the physician who declares himself fitted for the treatment of these disorders. What would we think of the ophthalmologist who knew how to treat granular conjunctivitis, but was entirely at a loss when confronted with glaucoma or cataract; or of the neurologist who had a sure remedy for chorea or neuritis, but was entirely nonplussed by cerebral syphilis or poliomyelitis. Whoever announces himself as prepared to treat diseases, to relieve or cure physical pain and distress, enters into a wide field, in which much is of right demanded of him. In times gone by the prophets and healers did not limit themselves to functional disorders of particular type. Whatever their success, they had the courage of their pronouncements, and called upon all who were sick to come and be healed.

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The modern clerical healer is in this respect, at least, wiser in his day and generation than his religious forebears. While from the very nature of his vocation, whether directly or indirectly—not to be irreverent—he may be said to be handing out doses of Divine Providence, he is careful to restrict his offering of help to those who are sick only in certain ways.

One of the greatest evils which has resulted in the past and will always result from the admixture of religion and medicine is that which arises from the use of suggestion. The man who can suggest cures—usually temporary—in those who flock to his shrine is likely also to suggest diseases to be cured by the same methods. As a result endemics and even epidemics of hysteria follow in the wake of the cure of sporadic cases of the same disorder when these cures are wrought with all the sensational accompaniments of a healing shrine. In the middle ages and before them, and in well-known historical periods in more modern times, diseases and disorders produced by influence or suggestion, have multiplied when it has become the fashion to deal with them outside the medical profession. I repeat therefore that psychotherapy like medicinal or mechanical or surgical or climatic, or any other sort of therapy, belongs to the physician and not to the clergyman, however sincere the latter may be in his idea that it is his duty to invade the province of his medical brother.

Harm is done, not alone to the community and to the medical profession by the psychotherapeutic efforts of enthusiastic but misled clergymen, but eventually to religion itself. Sooner or later he who is not cured, whose cries for help are not answered by relief, may come to doubt the truth of that faith which claims omnipotence for its God. Every neurologist of any considerable experience has had pass through his hands many cases of uncured disease in individuals of deep religious sentiments who have called in their extremity upon Christian Science or some similar healing cult, and who, failing to receive the benefit for which they have been led to hope, have lost their faith not only in religious healing, but also in everything spiritual. The strongest opponents of osteopathy, faith-cures and divine healing and all similar non-medical therapeutic methods or organizations, are those who, misled by great promises, consciously or unconsciously made, have come back to be cared for and treated by those who only claim for themselves the powers which are given to them through scientific study and experience with disease.

A FEW HINTS FROM PERSONAL EXPERIENCE IN PSYCHOTHERAPY INCULCATED BY PHYSIOLOGICAL ANALOGIES.

By TOM A. WILLIAMS, M.B., C.M. (Edin.).

Avoid inopportune moments for psychotherapy. Do it while physical powers are building up, during metabolic intervals, *e.g.*, as in a high-feeding tubercular who has his oscillations of bounding energy. Then let him alone in the anabolic stage for an anabolism of ideas. These must be not mere sug-

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gestion (in the French sense), but idea systems capable of assimilation by the psyche of the individual. Until assimilation, they are mere parasites, and just as is the urea, quickly excreted.

These must not be given in excess of patient's capacity, or mental indigestion follows or parrot-like absorption. They must be used by the patient; as learned otherwise, they quickly melt away like the injudiciously added fat of tuberculars. To fight a bacillus, the tubercular goes into physical training; to fight a habit, the psychic case does the same. It is not a hopeless battle any more than is the tubercular's; for environment has been a factor as well as predisposition, and the dosage of bad environment may have been very large, as conspicuously shown by "Wolf children," and Dr. Bernardo's boys, many of whom have done so well as emigrants in Canada.

It is our business to remove bad habits, no more by attacking them directly than we do the tubercle bacillus (all such procedures have proved futile), but by building up resistance by inculcating other habits.

Each one has had to be taught to control even the imperious organic needs of micturition and defæcation in order to be socially convenable. The very young child learns this with no motive save that of compliance with a superior from a dislike of the displeasure ensuing upon failure to comply. How much more of appeal have we not to one who understands the niceties of motive and the shades of meaning in language; but in the last resource we must not forget the more fundamental appeal of physical punishment, temporarily to break the back of the old man of the sea who has fastened upon the unfortunate Sindbad of life's journey, who appeals to us for assuagement of a suffering he himself has not the strength to remove. We can no more afford to spare the rod than we can the curette or knife when indicated. That chloroform of the soul, hypnotism, may alleviate the suffering, but has disadvantages which time forbids me to discuss now. The patient must take his medicine, as many a one has done before in the hard school of life, where the pain is often not followed by alleviation until a wrecked life strews the path. In other words, we use the quick instrument of man's intelligence (whereby he has stepped from the beasts) to control the natural impediments, the struggle against which has developed him to what he is. We thus render tolerable for the individual the disabilities his constitution or environment have furnished him.

Some patients can no more metabolize doubt than can a diabetic carbohydrates. The feeling of uncertainty creates as much distress in some as does the eating of shell fish, tobacco, alcohol, coffee, or even the presence of cats in cases known to every one. In other cases, they put on mental fat too readily. Not for these, then, the sweets of the psyche. These must be cut down as rigidly as must those of the corpulent. Others, on the other hand, find too great for them the high tension of excessive nitrogen consumption, cut down their proteid intake, let them not incur the slings and arrows of outrageous fortune. Steer them into the path where a tranquil life is possible; show them how persistence in the struggle spells ruin. If needful, invoke the fear of death as one does with the arterio-sclerotic or the consumptive. An-

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other denies himself the healthful derivatives found in salines. Show him how recreation pays by reducing stress, under which good work cannot long be done; how it wears the engine unduly. Show him how, without the fat to burn, the mind consumes itself; another how the water of sleep plays its part by washing away congestion of thought by permitting or commingling of elements unable before to overleap the barrier.

A mind which cannot metabolize a rich diet must be given a restricted one until it learns or develops the power; so simplifying the mental life. This is the chief function which ecclesiastic psychotherapy performs. A simple, stable, dogmatic conviction makes life easier for these people. They cease to be distracted by the numerous little difficulties of daily life, for all are referred to the common formula of dogma. This may be as absurd as the good-conduct-producing story of Fee-fi-fo-fum held over naughty infants, or the demoniac belief of the most superstitious of heathen; but psychologically it does not differ from any absurdity its believer does not detect.

We must then give to these searchers a clear call toward definite ideals of duty and feeling, backed by reasons satisfactory to their standard of criticism. Without being trimmers, we must enter into their conceptions, showing our understanding of them by leading them out of the quagmire of hesitancy into which they have stumbled; and above all being honest with them and ourselves in our solution of their difficulties. It follows that a man needs by temperament and training to be fitted for this task, and that such men are not too numerous.

Time and extension of medical training will remedy this, however, and we may expect to fit ourselves for the psychotherapy of the future, responding to the need of the new faith just as well as our progenitor, the priest, did when he was the repository of scientific learning in his turn. The evolution, like all enduring ones, must be slow, and cannot occur until the teachers arise; for few as are the capable practitioners, the capable teachers are infinitely fewer. For, to the scientific habit of mind, and the capacity of taking pains in the verification of detail, must be added the large view of the man of philosophical taste, and the human sympathy with the weak which does not often accompany the absorbed concentration needed in the fructification of the former qualities. Add to this the love for and the capacity of imparting one's knowledge and giving enthusiasm to one's youthful followers and the ingenuity required to furnish the concrete illustrations upon which to enable them to build their conceptions, the superstructure of which can come only with wide vision and mature intellect, and one can readily comprehend how rare a bird must be a competent teacher of psychotherapy. Indeed their non-existence just to now has provoked the statement that psychotherapy cannot be taught. The same was said of surgery, cookery, and all of the arts in their infancy. We now know the contrary, though no one pretends that everyone is susceptible of acquiring skill. Hence psychotherapists are not likely to abound.

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DACTYLITIS STREPTOCOCCI.

By JAMES K. YOUNG, M.D.

Professor Orthopœdic Surgery, University of Pennsylvania, Philadelphia.

Dactylitis, as first described by Taylor, is a syphilitic lesion of one of the phalangeal joints of the hand or foot. The joint involved is usually the proximal one or the one which articulates with the metacarpal or metatarsal.

Subsequently dactylitis of tubercular origin was described, and these two forms have been considered the only ones producing this lesion. The discovery of the streptococcus as a cause of dactylitis in the case to be recorded has led the writer to believe that this should be considered as a possibility when studying the etiology of dactylitis.

Case.—A girl, one year old, was brought by Dr. Susan R. Corson to consult me on April 20, 1906, for an arthritis of the right ankle joint. The child was of good American parentage, and free from hereditary disease. She had been artificially fed from her birth. When three months old she had a severe milk infection. About this time she was supposed to have been bitten by a mosquito or an insect, on the left hand, at the junction of the index with the middle finger. When five months old she had a squamous eczema of the scalp, and this was shortly followed by an attack of grippe-pneumonia. When she was ten months old the thumb of the left hand began to swell, and in twelve hours had reached twice its normal size, the swelling being in the first joint. There was later a swelling in the right ankle. An abscess formed on the outer side of the right leg and was incised.

Upon examination when brought to me in April, when one year old, the right ankle was found to be greatly swollen, the infiltration being soft, not fluctuating. There was also a sinus about 1¼ inches in depth discharging on the outer side of the leg. On the under side of the left elbow there was a very soft fluctuating cyst, and on the left hand the thumb was swollen to four times its normal size and of a firm consistency. The scar from the insect bite was still visible on the left hand.

The following day, under strict aseptic precautions, I opened the ankle joint, thoroughly curetted it, removing a quantity of pale granulating tissue, and afterward drained it. I also incised the abscess on the elbow. The fluids from each of these were sent to Dr. Pecham at the Women's Medical College, the report being streptococcus. I subsequently incised the dactylitic thumb and found the same kind of tissue containing the same coccus.

As the hereditary history was negative and the macroscopical appearance of the tissue removed did not render the diagnosis certain, while waiting for the report of the bacteriological examination I examined very carefully a colored boy, the son of the cook employed on the premises, and also her immediate family, at their homes, with the family physician. The boy was defective mentally and was subject to epilepsy. He also had a tubercular bronchitis from which he died twelve months later. His mother had an attack of pneu-

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monia and subsequently died of pulmonary pthisis, and a cousin living in the same house died of tubercular meningitis.

Dactylitis Syphilitica.	*Dactylitis Tuberculosa.*	*Dactylitis Streptococci.*
Symptom:— Paronychia syphilitica.		
Is generally located in the proximal phalanx or one articulating with the metacarpus or metatarsus.	Same location.	Same location.
Is acquired or hereditary. Latter part of early stage, or in late syphilis.	Is acquired or hereditary.	Primary lesion.
It is a gummatous infiltration in the ligaments and periosteum of the joint, and involving the subcutaneous structures and integuments.	It is essentially a periostitis of the phalanges, and the cartilaginous extremities of the bones are not affected. The tuberculous focus opens through the skin by one or more openings which may become infected.	Begins in synovial membrane and involves all joint structures, finally involving the medulla.
Painless swelling, with marked deformation.	Painless at first but becoming painful when infected.	Rapid painful swelling.
Leaves joint ankylosed or flail-like.		Leaves the joint ankylosed and destroyed.
Late form begins in bone and extends to joint, involving all the structures except the skin, and leading to ankylosis and destruction of the joint. When beginning in the muscular tissues it has been called by Lewin phalangitis syphilitica.	The pyramidal form of the swelling is due to the formation of new bone.	

Diagnosis.—In making the diagnosis it has to be distinguished from simple paronychia, enchondroma, and exostosis.

From simple paronychia the location of the swelling and the absence of acute inflammatory symptoms would serve to distinguish it.

The diagnosis of enchondroma could be made by the absence of general disease like syphilis, tuberculosis, or septic infection, the involvement of more than one bone, and the x-ray picture.

The hard, regular-formed, slow growth, the absence of pain and suppura-

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tion, and the dense bone-like shadow shown in the x-ray would serve to diagnose exostosis.

A careful search of the literature of the subject made for me by Dr. H. Schwatt failed to reveal any reference to streptococcus as a cause of primary dactylitis, so that I believe this to be the first account of the subject published.

The importance of the discovery cannot be overestimated, since many cases of bone and joint disease due to streptococcus are improperly diagnosed as due to syphilis or tuberculosis.

The Therapeutics of Diseases Which Involve the Internal Secretions

THE BIER HYPERAEMIA METHOD—HOW TO ENHANCE ITS CURATIVE EFFICIENCY.

By CHARLES E. de M. SAJOUS, M.D.

PHILADELPHIA.

(Concluded from the June issue.)

The practical value of agents administered internally for the purpose of enhancing the bacteriolytic and antitoxic properties of the blood, as a prelude to, and concomitant of, Bier's method, suggests itself in view of the well known fact, recently reaffirmed by von Graff[3] that the blood-plasma of healthy subjects is endowed with such properties to a very slight degree, if at all. This is also strengthened by the many experimental data available which show that we are dealing, as a direct effect of the hyperæmia method, with a localized exacerbation of immunizing activity, quite in keeping with Bier's own view of the modus operandi of his method, that "the circulatory stasis renders both the bacteria and their toxins harmless in the part, while preventing necrosis by insuring excessive nutrition of its tissues." Indeed, Noetzel and others found that an artificial œdema was produced and that the accumulated fluids were eminently bactericidal. While Noetzel erred in ascribing to these fluids bacteriolytic properties that were capable of coping successfully with all bacteria, including the most virulent, the fact remains that his teachings apply to many pathogenic germs, and that, as emphasized by von Graff, the fluids to which the œdema is due are far more bacteriolytic than serum derived from the blood elsewhere in the body. Such being the case, the efficiency of Bier's method cannot but be increased by enhancing the general production of the substances to which the localized œdema owes its bactericidal and antitoxic power.

[3] Von Graff: Münch. med. Woch., Feb. 11, S. 277, 1908.

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To apprehend the mode of action of the remedies indicated in this connection, a clear conception of the nature and limits of the immunizing process awakened is necessary.

In the first place, the œdema provoked by Bier's method is not alone composed of bactericidal fluid as compared to serum in other parts of the body; as noted by Colley and others, this applies as well to œdema-fluid derived from a region in which inflammation or ulceration prevails, and even in the blisters caused by iodine. In other words, and in keeping with experimental data I have submitted in the second volume of "Internal Secretions," a localized œdema or hyperæmia becomes the seat of a bactericidal and antitoxic process whatever be the cause of irritation.

In the second place, it is well to bear in mind that different bacteria are not all affected with the same degree of activity. In a series of experiments in rabbits, for instance, Baumgarten[4] caused venous stasis by means of a rubber tube bound about the groin, and then injected tubercle bacilli, staphylococci, and anthrax bacilli, some subcutaneously, some into the knee-joint. In the experiments with tubercle bacilli the stasis was maintained an hour or two daily for several weeks, in those with staphylococci for twelve to twenty-four hours, with intervals of twenty-four hours; in those with anthrax for twenty-four to forty-eight hours once only. The most favorable results were obtained in the experiments with anthrax bacilli. After the stasis had been maintained from thirty-six to forty-eight hours the inoculated bacilli were found to be reduced to slight degenerated traces, and the animals remained well after the rubber band had been removed. Less favorable results were obtained in the experiments with staphylococci and in those with the tubercle bacilli the stasis treatment was almost without effect.

This should not be taken to mean that venous stasis is ineffectual in tuberculosis, we have seen, in fact, that it is beneficial in various disorders due to the tubercle bacillus; but the feature to be borne in mind is that in the case of such resistant organisms the chances of success are increased by enhancing artificially the aggressiveness of the bactericidal process. In other words, the indication is to raise the defensive activity of the blood retained in the diseased area by the Bier method to such a degree that both the bacteria and their toxin will be totally destroyed. This will serve not only to arrest the local disease, but also to prevent general intoxication.

How can this be accomplished?

Joseph[5] and subsequently von Graff[6] found that toxic doses of strychnine failed to increase the bactericidal and antitoxic properties of the œdema-fluid. Tetanus and diphtheria toxins proved as ineffectual in this particular. Now if the actions of these poisons as I have defined them[7] are taken as standard, it

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[4] Baumgarten: *Ibid*, Nov. 27, 1906.

[5] Joseph: *Ibid*, Nu. 40, S. 1917, 1905.

[6] Von Graff: *Loc. cit.*

[7] Sajous: "Internal Secretions and the Principles of Medicine," Vol. I, p. 757, 1903 and Vol. II, pp. 1225, 1437, 1907.

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will be found that strychnine in toxic doses paralyzes all functions by causing excessive vaso-constriction, and that tetanus and diphtheria toxins are *depressants* of the adrenal center and, therefore, of the entire immunizing mechanism of the body. We need not wonder, therefore, that Joseph, von Graff, and others have failed to enhance the bacteriolytic and antitoxic properties of the fluids in the areas submitted to the method. Conversely, it is self-evident—in the light of my views—that we should employ only those agents which by stimulating directly the adreno-thyroid center, are capable of enhancing the proportion of these substances in all the body-fluids and, therefore, in the hyperæmic area, *i.e.*, remedies such as desiccated thyroid, iodine or the iodides, mercurials, etc.

The use of these agents should however, be attended with due regard for the strength of the patient. In the diseases enumerated in the foregoing pages, recovery will be materially aided by the use, in adults, of desiccated thyroid, 3 grains three times daily. In fact, this agent will alone effect a cure in many of these disorders. But such doses might prove detrimental in debilitated subjects by enhancing their metabolism too actively. This may be avoided by watching the temperature, which supplies of course, a clear index to the intensity of the degree of oxidation to which the tissues and the blood elements are submitted. If the rise of temperature exceeds 1 degree Fahrenheit, the dose should be reduced until this limit is attained. In some cases 1 grain three times daily suffices. I must again, in this connection, emphasize the fact that the average dose given in the 1905 Pharmacopœia (4 grains) is indicated only in obese subjects for the reduction of fat, and that under any circumstances such a dose should only be employed with the greatest circumspection.

In many of the surgical disorders, furuncles, carbuncles, abscesses, infected wounds, etc., the curative process is materially aided by adding to the desiccated thyroid either strychnine or quinine. This is especially the case when large doses of thyroid—which tend greatly to lower the blood-pressure—are administered. By exaggerating catabolism in the muscular elements of the blood-vessels, such doses withdraw from the peripheral tissues, including those which are the seat of the lesion, much of the blood upon which the curative process depends. Strychnine and quinine, as shown by evidence submitted elsewhere[8] act mainly on the vasomotor center and thus raise the blood-pressure throughout the entire organism. The blood, enriched by the auto-antitoxic bodies and the phagocytes produced in excess under the influence of the desiccated thyroid, is thus driven in increased quantities into the capillaries of all organs, including those which are diseased, and recovery is correspondingly insured and hastened.

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[8] Sajous: *Ibid*, Vol. II, pp. 1225, 1240, 1907.

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Cyclopædia of Current Literature

ALBUMINURIAS.

Albuminuria may be due to a great variety of causes, both physiologic and pathologic, of which structural disease in the kidneys forms but a small, if highly important, minority. The majority of the cases are due either to altered blood states or to failure in the normal vasomotor mechanism. This failure may manifest itself in one of two directions. In the first, chiefly by some means so far undiscovered, the blood-pressure in the splanchnic area arises, and is maintained at a sufficiently high level to induce a renal plethora and consequent albuminuria. Of such are the cases of hyperpiesis, as in the instance quoted. In the second place, owing to a local or general vasodilatation, the blood-pressure in the splanchnic area falls to the point at which a renal stasis is induced. Of such are the cases of cyclical, postural and athletic albuminuria of which also instances are cited, cases which for the most part occur in young adults, in whom the vasomotor response is either undeveloped or for some reason is inadequate. Having regard to these facts, the writer ventures once more to insist not only that, of itself, albuminuria affords no evidence of renal disease, but that, of itself, it does not present even a reasonable suspicion of the existence of such disease, any more than, of itself, dyspnœa presents a reasonable suspicion of cardiac disease. L. Williams (Clinical Journal, April, 1908).

ATROPHIC RHINITIS, TREATMENT OF.

So far as it can be ascertained, the treatment of atrophic rhinitis must be based on its etiology and pathology. A careful examination as to the condition of the accessory cavities should always be made and in some cases purulent inflammation of these will appear to be a large etiological factor.

Remedies are external, internal, and local. Iodine is the essential ingredient of all internal remedies and gives results by increasing glandular activity. The local treatment consists first of measures to bring about cleanliness; then by stimulation to improve the condition of the atrophied glands. The number of such local remedies is very great and consists of the essential oils and their chemical compounds with the salts of silver, alum, zinc, and the like. Massage and cotton tampons, and high frequency electricity, are also used. Surgical measures have not accomplished much.

In most cases internal treatment as may be indicated, careful cleansing, the local use of stimulating substances by the physician, accompanied by the careful cleansing at home with a saline wash several times daily, accomplish about all that can be hoped for. All cases improve, few get well. George L. Richards (Transactions New York Academy of Medicine, February 26, 1908).

BRONCHIAL CATARRH, ALKALIES IN THE TREATMENT OF.

The use of salicylates is referred to by the writer in the treatment of bronchial catarrhs. They are apt to fail when the urinary acidity is low, and as the effect of dyspnœa is to increase the alkalinity of the blood and lower the acidity of the urine, it follows that the

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salicylates will often fail in the time of greatest need, that is, when dyspnœa is considerable and the heart is beginning to dilate. The author believes that this class of remedies acts simply as a solvent of uric acid. Following this matter up and believing that salicylates act in these cases merely as solvents of uric acid, it occurred to the author that the condition (dyspnœa with falling acidity of the urine) which is unfavorable, to the solvent action of the salicylates would, on the contrary, be quite favorable to the solvent action of alkalies. He therefore began to try these older solvents of uric acid, with results which soon demonstrated that his conjecture was correct. He found that it was only necessary to give alkali in sufficient dose to render the urine alkaline to cause an immediate fall of temperature and speedy resolution of symptoms in many cases of bronchitis and bronchopneumonia. To do this it was necessary to give alkali almost alone (say, sodii bicarb., gr. xx to lx for a child, or xc to cxx) for an adult in the twenty-four hours), and on no account to give ammonium with it as this raises the acidity of the urine and has been proved by others to do harm in rheumatism. If a cardiac tonic is required digitalis can be used, but everything that raises the acidity of the urine must be avoided, and even such flavoring matter as orange and sugar, which tend to raise acidity, are better left out. If the alkali is going to do good, the temperature generally drops decidedly in from twenty-four to forty-eight hours, but it should not be given up as useless till the urine has been rendered alkaline. After the temperature has been normal for one or two days, the author reduces the alkali to a small dose (gr. x), and adds a little belladonna to dry up secretions, and the trouble is at an end.

To sum up he lays down the following rules: (1) Give the alkali in sufficient quantity to make the urine alkaline; (2) avoid combining it with drugs that raise the acidity of the urine, or in fact with anything which acts as a precipitant of uric acid, such as lime, the metals or their salts, or even the chlorides, sulphates, or nitrate of the alkalies. Ammonium, so often given in these conditions, is one of the worst things to combine with the alkali, for it not only raises the acidity of the urine, but its urate is insoluble. A. Haig (British Medical Journal, May 9, 1908).

CANCER IN AN EXOPHTHALMIC GOITER.

The author's patient was a woman of 54 with mitral insufficiency who had presented the symptoms of exophthalmic goiter for six months. No benefit was derived from heart tonics, salicylates or thyroid treatment, and the patient succumbed to pulmonary œdema. Autopsy revealed an atypical epithelioma in the thyroid accompanied by relics of colloid and fibrous goiter. The parathyroid and suprarenal glands and hypophysis were hypertrophied; the characteristics of the hypertrophy differed from those of ordinary vicarious hypertrophy and seemed to be more of a response to intoxication. The valvular trouble, previously well compensated, began to cause disturbances almost at once as the cancer started to develop. The case suggests that exophthalmic goiter is due more to perverted than to abnormally excessive functioning of the thyroid. Clunet (Archives des maladies du coeur, des vaisseaux et du sang, April 1, 1908; Journal of the American Medical Association, May 23, 1908).

CARCINOMA.

The onset of the ordinary forms of carcinoma is always preceded by a con-

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dition characterized by epithelial hypertrophy and certain constant changes in the subepithelial tissue. This precarcinomatous state may be attained through various inflammatory processes, at first quite distinct from one another, but culminating in the same histological picture. The tissue cell proliferation occurring around a primary carcinoma is a part of the precarcinomatous process and materially assists the progress of the growth. There is no histological evidence of a protective reaction on the part of the tissues to the carcinoma cell. Though changes in the adjoining connective tissue bear some very close relation to the cause of epithelial ingrowth, yet malignancy having been established the further spread of the tumor is independent of such assistance. Victor Bonney (Lancet, May 16, 1908).

CEREBROSPINAL MENINGITIS, EPIDEMIC; TREATMENT WITH DIPHTHERIA ANTITOXIN.

Since 1805 epidemic cerebrospinal meningitis has been known as a distinct disease. Formerly it occurred only in widespread epidemics; in recent years, however, it has in many localities become an endemic disease. The etiological factor is the diplococcus intracellularis meningitidis of Weichselbaum. The presence of this special diplococcus in the spinal fluid is diagnostic of epidemic cerebrospinal meningitis. Some cases die from the intense toxæmia with very little inflammatory exudation, while others have very little toxicity, but considerable inflammatory exudate which causes death by compressing the cerebral centers.

In the past this disease was considered practically incurable. Recently, the reverse has been claimed, and the four cases reported by the writer would seem to bear out the latter deduction. Diphtheria antitoxin was practically the only remedy used. The composition of the antitoxin is an unknown quantity, and the explanation for its action cannot be given logically, and it, therefore, must be classed as an empirical remedy. If its composition can be obtained, then it might be transferred to the scientific class of remedial agents.

If the cure as expressed in these cases was due to the antitoxin and similar results could be obtained in 100 cases, this form of meningitis would be curable in 75 per cent. of the cases. Apparently, to be of avail, antitoxin must be administered early in the disease. W. H. Porter (Post-Graduate, May, 1908).

DIABETES MELLITUS, ASSOCIATION OF TUBERCULOSIS OF THE LUNGS WITH.

The writer reviews the literature on this subject, finding from it that the association is a frequent one and that in the early stages of this combination one or the other of the two maladies is often overlooked. In diabetes the pulmonary affection often runs an analytical course. The face may be cyanotic instead of pale. Cough is often slight and expectoration scanty. Sugar may sometimes be demonstrated in the sputum. Appetite may be preserved and even supernormal. There may be no fever, and sweating is rare. When phthisis develops in a diabetic polyuria and the sugar output are often both lessened. The recognition of the synchronous presence of both diseases affects the prognosis because it conditions the nature of the food and medicines which should be given. Administration of large quantities of fats and oils may hasten the onset of diabetic coma. A diet of meat, fat, cheese, and eggs is good for both diseases. Milk

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may often be permitted in diabetes, especially when sour or artificially fermented.

The drug of greatest value in diabetes, opium, with its derivatives, codeine and heroin, is also indicated for the cough, the hæmorrhages, the diarrhœas, and to promote the euphoria of the advanced consumptive. The diabetic consumptive is very often afebrile, and for such cases exercise in moderation in the fresh air is not contraindicated. Such exercise is distinctly useful for the diabetic, as it has been shown that larger quantities of carbohydrates are tolerated on account of the increased consumption of sugar by the muscles during exercise. Creosote and guaiacol carbonate, which have continued in favor for tuberculosis, are also believed to relieve the symptoms of diabetes, notably the thirst and polyuria. Arsenic and strychnine, which have their advocates in diabetes, are good systemic tonics for the consumptive. Hydrotherapy is of undoubted value in both diseases, as are also the alkaline mineral waters, woolen clothing next the skin, abstinence from tobacco, freedom from worry and care, and a quiet life in the country in a mild, dry, and equable climate. H. L. Shively (New York Medical Journal, May 16, 198).

DUODENAL ULCER, DIAGNOSIS OF.

Duodenal ulcer may be distinguished from gastric ulcer by the seat and character of the pain, the indefinite relation of both pain and vomiting when this occurs to ingestion of food, and the absence of hæmatemesis. Melæna in association with pain in the right hypochondriac region is very significant. A history of chronic indigestion occurring after middle life may suggest malignant disease of the stomach, but the chronicity and intermittency of the symptoms which may have lasted some years, and absence of severe emaciation and cachexia, usually enable a correct diagnosis to be made. In doubtful cases a test meal is of great value; in duodenal ulcer there is often excess and seldom absence of free hydrochloric acid. In all cases, before considering operation, care should be taken to exclude the possibility of gastric crises from locomotor taxia. J. F. H. Broadbent (Lancet, May 16, 1908).

ECZEMA.

The various measures in vogue for treatment of eczema are reviewed by the writer, and he remarks that the curative action of sulphur in certain forms and of tar preparations in others indicates that they act on the causal germ. Prolonged application of alcohol will destroy all the cocci on the skin, and alcohol sprays and alcohol dressings are, therefore, useful. The eradication of the eczema parasites in their remotest nooks is an important part of rational treatment, and is the only means of preventing relapses.

Special attention must be paid to the hair follicles, the lanugo hairs, the crevices around the nails and all the folds of the skin and parts subject to friction. The previous sites of eczema must be cleansed daily; if dry, they should be rubbed with some mild disinfecting salve; if greasy, alcoholic solutions and soaps should be given the preference. Schwenter (Correspondenz-Blatt für schweizer Aerzte, March 1; Journal of the American Medical Association, June 6, 1908).

ENTEROPTOSIS, SURGICAL PHASES OF.

No cases of enteroptosis should be operated upon until medical and mechanical means have been exhausted without relief. Cases of ptosis due to a congen-

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ital habitus will not be relieved by operation, except in the rarest instances; they should not be considered, therefore, as amenable to surgical treatment. In order to arrive at an accurate estimate of the degree of ptosis, the x-ray should be employed.

In cases following child-birth, where the abdominal wall is very lax, thus destroying the equilibrium between the extra- and intra-abdominal force, resection of the relaxed ventral tissue through the method suggested by Webster, may give perfect relief, provided the diastasis has not been of such long standing that the abdominal organs are far below their normal levels. In the latter case, in addition to the Webster operation, it may be necessary to suspend the colon by means of the omentum, thus relieving the stomach of the weight of this organ, and at least temporarily supporting the stomach until there may be a natural shortening of its ligaments. In a simple gastroptosis without marked participation of the colon, the Beyea operation may be the one of preference.

If the cardiac end of the stomach has been greatly dilated, forming a kink at the pylorus and a decided notch in the lesser curvature, a no-loop gastro-enterostomy may be necessary, with closure of the pylorus. (This is merely suggested by the writer, since he has had experience in only one case with this operation.)

In exaggerated cases of ptosis of the transverse colon, where a pendulous loop is formed which produces stasis of the fæcal current, as well as tending to twist upon itself, with symptoms of partial obstruction, nothing less than excision of the redundant loop with end-to-end anastomosis will cure the case.

In cases of redundant sigmoid, with more or less constant pain in the left side, associated with obstinate constipation, a suspension of the sigmoid so as to pull it up out of this bad position in the pelvis, may give entire relief. On account of the constant mobility of the sigmoid a recurrence may be noted. In exaggerated cases of redundant sigmoid attended with symptoms of extreme constipation, verging on to obstruction, a resection of the sigmoid may be advisable.

In all cases a carefully fitted abdominal support, or carefully adjusted straight front corset, should be worn after operation in order to give as much artificial support as possible. J. G. Clark (Surgery, Gynecology and Obstetrics, April, 1908).

HEART, WORK HYPERTROPHY OF THE.

It has been very generally assumed that as the result of increased work the heart will hypertrophy, and this assumption has been submitted to experimental test by a number of observers. The writer has further studied the problem by comparing the proportionate weight of the heart and parts of the heart to the body-weight in caged rabbits, wild rabbits and hares. He finds, as might be expected, that the proportionate heart-weight is greater in those animals accustomed to muscular activity; and in different races developmentally related it is to be assumed that the larger heart has resulted from a development of the heart muscle in proportion to muscular activity. The writer finds that the right ventricle proportionately is increased more in weight than the left, which fact at first seems rather surprising. He seeks an explanation of the increase in the size of the right ventricle in an increased intrapulmonary pressure resulting from the acute emphysema, caused by the more rapid and

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more forcible respiration of the animal during muscular exercise. Possibly another factor in this is the fact that an animal running expires against the air resistance created in his motion, and consequently uses more respiratory effort against resistance, and so brings about a condition analogous to emphysema. In this emphysema the intrapulmonary blood-pressure is raised in part by the increased capillary resistance in the walls of the distended alveoli. Grober (Deutsches Archiv für klinische Medizin, Band 91, Heft 5 and 6; Boston Medical and Surgical Journal, June 11, 1908).

HODGKIN'S DISEASE A TYPE OF SARCOMA.

The clinical features of Hodgkin's disease are often so nearly identical with those of round-celled sarcoma, that it is impossible to differentiate the two conditions. The histological features so closely resemble sarcoma, that if a given specimen be examined by different pathologists, opinions would be about equally divided between Hodgkin's disease and sarcoma. The onset of the disease, its course and duration, formation of general metastases, and final going-on to inevitable death, most closely simulate sarcoma.

While, in most cases, the metastases occur in pre-existing lymph glands tissue, this is by no means always true, since in some cases, *e.g.*, Gibbons' and the writer's own, the tumor breaks through the capsule, infiltrates the surrounding tissues, fascia, muscle, periosteum, and the bone itself. The fact that Hodgkin's disease and leukæmia have certain features pointing to an infectious origin, should not exclude them from being classed as malignant tumors; but, on the contrary, this fact furnishes additional evidence in favor of the infectious origin of sarcoma.

In view of the utter hopelessness of Hodgkin's disease as well as leukæmia from surgical and medical treatment, and in view of the remarkable results obtained, though in a very limited number of cases, with the x-rays and toxins, the best chance of success apparently lies in a wider application of these methods of treatment, either singly or in combination. W. B. Coley (Surgery, Gynecology and Obstetrics, June, 1908).

LUPUS ERYTHEMATOSUS AND ERYTHEMA MULTIFORME, THE RELATIONSHIP OF.

Certain cases of lupus erythematosus and certain types of erythema multiforme are so closely related that they may be regarded as the ends of a chain, in which all transitional stages may be encountered. They are both due to toxins of various sorts and of different degrees of virulence. In erythema multiforme we have a virulent toxin acting on an individual with a comparatively healthy circulation; whereas in lupus erythematosus the toxin is less virulent and acts on an individual with a defective peripheral circulation, and tends to affect situations where, from anatomical reasons, the circulation is accomplished with difficulty. In the case of erythema multiforme the reaction is acute and transient, while in lupus erythematosus it is prolonged, and as it occurs on a tissue with a defective circulation it leads to destructive changes and atrophy. The exact nature of the toxin or toxins which are directly responsible for such cases is still uncertain. The above conclusions only refer to certain cases of lupus erythematosus, and there are others which probably result from external causes. J. Galloway and J. M. H.

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MacLeod (British Journal of Dermatology, March, 1908).

NEURITIS, NITROGLYCERIN IN.

Thirty-two cases of neuritis are reported by the writer, treated with nitroglycerin after the method suggested by Krauss, of Buffalo. Beginning with $\frac{1}{100}$ of a grain every eight hours the interval was reduced one hour in every twenty-four until the full physiologic action of the drug was manifest, or the patient was taking $\frac{1}{100}$ of a grain every three hours, at which interval it was continued. Sodium bromid controls the flushings and headache. In acute cases the effect was marked within forty-eight hours. In chronic cases, ammonium and potassium iodid in progressively increasing doses hastened the action of the nitroglycerin. The actual cautery was also used over the nerve. H. B. Stevenson (Medical Record, May 16, 1908).

OBESITY, TREATMENT OF.

Gradual reduction of obesity may follow slight but persistent limitation of the amount of food, especially of nitrogen-free substances, with moderate but regular exercise. This reduction of obesity can be accomplished without essential changes in the mode of life and without interfering with business. This slow but infinitely more effectual method of treating obesity is preferable for the milder and uncomplicated cases. It is immaterial whether the proportion of carbohydrates or—as the author prefers—of fats is reduced. It is important, however, to maintain the albumin in due proportions. The writer never goes below 90 gm. a day. The conditions are different with complicated and constitutional obesity. In the latter case the organism resists all dietetic restrictions. To avoid weakening the patient, treatment must be cautious. It is enough to reduce carbohydrates and fats to keep from further increase in weight. In obesity complicated with heart disturbances the aim must be to reduce the weight rapidly. The restriction of water is not advised. After completing the acute course of treatment, chronic reduction is begun, controlled by the patient's subjective well-being. The diet suitable to-day may be inappropriate a month later.

The writer advises interposition of an occasional day of fasting, allowing only tea with lemon and saccharin, a little graham bread, two or three hard-boiled eggs, a plate of broth and a few tart apples—a total of 417 calories. The patients are generally soon convinced of the favorable influence of this fast day. He cites examples which show the rapid decline in weight in the weeks with one fast day. The aim of this day is to eliminate every kind of fat and to restrict the carbohydrates to the lowest point, while yet filling the stomach and allowing plenty of water. In this way he found it possible to effect a cure in numerous cases of moderate obesity in which other methods had failed or had been carried out only with great difficulty. In mild cases fast days are superfluous, and in the very severe cases of constitutional obesity the outcome even with this is dubious. I. Boas (Archiv für Verdauungs-Krankheiten, April, 1908; Journal American Medical Association, June 6, 1908).

OXYGEN IN MEDICINE AND SURGERY.

From an experimental study the writer concludes that oxygen is completely absorbed in the abdominal cavity. It is a slight respiratory and cardiac stimulant and has but little effect upon blood-pressure when the pressure of the gas is

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moderate. It tends to bring an animal quickly from deep anæsthesia and hastens the recovery of an animal after discontinuance of the anæsthetic. A pressure of more than 1500 millimeters of water may cause collapse. Oxygen tends to prevent the formation of adhesions. It quickly changes a dark blood to scarlet in cases of anoxemia. It stimulates intestinal peristalsis and is not an irritant to the peritoneum or abdominal viscera. W. S. Bainbridge (New York State Journal of Medicine, June 1, 1908).

NEURALGIA, CHLOROFORM SUBCUTANEOUSLY IN.

The writer considers chloroform as the nearest approach to a specific in the treatment of neuralgia. The method in his hands has proved to be devoid of any untoward effects, both immediate and remote. Chloroform injected locally has no systemic effects. It has a local anæsthetic effect, which is desirable. Superficial injections often act with certainty, even when the pain seems to be deep seated. S. Ormond Goldan (New York Medical Journal, June 13, 1908).

PULMONARY TUBERCULOSIS, POSTURAL TREATMENT OF.

The author has devised a lying-out chair for patients suffering from pulmonary tuberculosis which they have used with great benefit. This chair consists of two parts—a downward inclined plane, on which the upper part of the body rests, and a lower portion, which supports the knees and feet. In this way a double inclined plane is thus formed, and while the patient gets all the benefit of gravity—drainage of the cavities, etc., in the lung—yet excessive blood-pressure in the cerebral vessels is obviated, as the lower extremities of the patient are not raised above the level of the head. In all other previous attempts to invert a patient, congestion of the head has proved a great obstacle to maintaining the position for any length of time.

The patient at first uses the inclined plane for only half an hour, three times a day. Later some hours may be spent in this position, either waking or sleeping. In addition to using the force of gravitation for the drainage of corrupt accumulations in the lung, an important modification of the pulmonary circulation is brought about by the forward inclination of the thorax. The apices of the lungs, now in a more dependent situation, have at once a fuller blood-supply, and some parts of the pulmonary tissue become relieved from the weight of the heart, which falls forward to be supported by the sternum. Of equal or greater consequence is the increased diffusion of blood which supervenes in the upper and more confined parts of the lungs. This mechanical plethora will be at its limit some time after the prone position is assumed, when a partial readjustment of the circulation will subsequently ensue, influenced by the nervous centers which control the pulmonary vessels, and on the individual rising from the prone position the blood-supply to the lungs and other organs will gradually resume its ordinary condition. This go and come of blood surplusage or recurrent hyperæmia is, to the deteriorating apex, what takes place in the normal being under conditions of rest, alternating with healthy plethora caused by vigorous muscular effort. The bactericidal power of the blood circulating actively in a part has been demonstrated, and artificial hyperæmia as a remedial measure has been attempted in various ways.

Cases of pulmonary tuberculosis which

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should not undergo this mode of treatment are those with a tendency to hæmorrhage, those with disease of a pronounced pneumonic type, or with fluid in the pleural cavity. A. T. T. Wise (Lancet, May 30, 1908).

QUININE, ACCIDENTS FOLLOWING INJECTIONS OF.

The sloughs that follow a very superficial subcutaneous injection can always be avoided if the general condition of the patient is not bad. An abscess almost always follow an intramuscular injection in a patient formerly infected or intoxicated. It follows then that every intramuscular injection of quinine should be given by preference with slowness, in small doses, at a point unaffected by previous treatment, in the gluteal or abdominal regions, and the patient remain quiet and limit as far as possible the number and force of the contractions of the muscles affected during the day following the intervention. R. de Gaulejac (La presse médicale, May 13, 1908; New York Medical Journal, June 20, 1908).

SALT SOLUTION, USE AND ABUSE OF.

Physiological salt solution is a fluid which is isotonic with the plasma of the blood. Its field of therapeutic usefulness is in conditions which cause alterations in the quantity or quality of the plasma. The quantitative alterations are chiefly those which are caused by hæmorrhage and obstruction of the upper bowel. The qualitative alterations are caused by the various toxæmias. The exact percentage of salt in the solution is important, and extemporaneous solutions are to be condemned, owing to the danger of hæmolysis. The subcutaneous tissue forms the most useful avenue for the introduction of the fluid. The intravenous route may be used in emergencies, and for post-operative purposes the rectum is most serviceable. Its use for irrigating purposes in abdominal surgery will not prevent the formation of adhesions, and it is probable that its use for washing away pus, blood, and *débris* is no more effective than dry sponging. E. A. Balloch (American Journal of Obstetrics, April, 1908).

SPONDYLITIS DEFORMANS.

An infection of some kind, apparent or hidden, plays an important rôle in the etiology of this disease. Except for clinical purposes, we are not yet warranted in classifying this disease into two separate and distinct types. The probability is that spondylitis deformans is not a distinct entity, but a clinical term covering many perhaps etiological and pathologically distinct diseases in which spinal stiffness is the most prominent symptom. Proper treatment in early cases, as a rule, brings good results; in later cases it relieves distressing symptoms. Theodore Diller and George J. Wright (Journal of the American Medical Association, May 30, 1908).

SUPPURATION OF THE MIDDLE EAR, MANAGEMENT OF.

The analysis of 100 cases in private practice has caused the author to come to the following conclusions: Purulent otitis media appears to be without danger if treatment is commenced before complications arise. A mastoid operation is not a menace to hearing, but a safeguard and gives the best post-operative ultimate results. The average period of convalescence is shorter by the cleansing than by the operative method. The radical mastoid operation is contraindicated in cases of non-complicated otorrhœa. Mastoiditis with middle-ear sup-

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puration gives better hope of the hearing than if there is no marked complication. No noticeable scar or deformity follows any form of mastoid operation, when properly performed. Cleansing treatment insures against the appearance of complications in all varieties of middle-ear suppuration. The results of treatment of suppurative otitis media compare very favorably with the results following treatment of the dry form of otitis media. W. Sohier Bryant (The Laryngoscope, March, 1908).

SYPHILIS, PRACTICAL VALUE OF MODERN CONCEPTIONS OF.

Although it was always stated that one infection of syphilis conferred an absolute and permanent immunity, this was never accepted universally. But the few reports of reinfections could never be confirmed. It is known at present that there is a period during the existence of a chancre when multiple autoinoculations occur, and that, furthermore, there is a time limit to the protection conferred on an individual by his first attack of syphilis, after which reinfection may take place again. The diagnostic feature of one single initial lesion of syphilis, as distinguishing it from the multiplicity of chancroids, should not be relied on any more. Multiple syphilitic chancres have been reported lately by Taylor and others, appearing simultaneously or successively and in different stages of evolution. Finger's explanation of this recurrence seems most rational: Immunity begins and develops gradually with the first appearance of the primary lesion. It grows in intensity during the secondary stage, but never becomes absolute. After reaching its climax it again decreases in its potency until a virus which may have remained latent for a time can produce new pathological changes, or an infection from outside sources becomes a possibility. A. Schalek (Journal of the American Medical Association, May 2, 1908).

UPPER AIR PASSAGES, DISTURBANCES IN, CONNECTED WITH AFFECTIONS OF THE UROGENITAL APPARATUS.

The author points out the connection between many disturbances in the upper air passages and affections in the urinary or genital apparatus, and reviews this connection in detail, believing that it is important not only for diagnosis but also for treatment and prognosis. Epistaxis occurring in the course of interstitial nephritis is usually bilateral, and the flow of blood is not restricted to certain parts, but exudes over the entire mucosa. The nasal mucosa may also appear unusually pale, owing to the general anæmia. These symptoms of bleeding and pallor may be still more marked in the mouth and throat. The base of the tongue may be the seat of varices and the palate and uvula may be red and swollen as in case of uricæmic arthritis. or there may be œdema of these parts. Tonsillitis is such a frequent forerunner or accompaniment of nephritis that Adler advises examination of the urine in every case of tonsillitis. There is also the specific uræmic stomatitis and pharyngitis with the smell of urine, ammonia, in the breath. Membranous glossitis has also been observed in the course of kidney disease. Œdema of the larynx or trachea has sometimes been observed as the first sign of acute nephritis, and it is liable to recur during its course. J. Sendziak (Medizinische Klinik, March 1; Journal of the American Medical Association, April 4, 1908).

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Book Reviews

APPLIED PHYSIOLOGY. A Manual Showing the Functions of the Various Organs in Disease. By Frederick A. Rhodes, M.D., Professor of Physiology and Embryology, Medical and Dental Departments of the Western University of Pennsylvania. Medical Press, Pittsburg, 1907.

The appearance of this book makes an era in medicine in that it expresses the need of the student for information on a subject applied to the rudiments of his art. The book in its present form is small, barely 200 pages, but the author promises to enlarge this increasingly, as subsequent editions shall be called for. They ought to be called for, if the reading public can appreciate the importance of the subject to each and every one. At present it is a mere outline systematically arranged under logical headings and sub-headings, presenting admirably a series of suggestive relationships between structure, function and pathogeny. The only book known to the reviewer in any way similar is the masterly work by Krehl which has been so highly extolled by Osler, entitled "Pathologic Physiology." Many indications point to the conclusion that the student of medicine, and even more so the practitioner of some years' standing is gravely discomforted by his lack of knowledge of the primordial principles which govern growth, change and decay. The text-books are too often marred by what may be regarded as inevitable technicalities and, the subject being so large, inadequate references to practical problems, for which a knowledge of physiology is designed.

These two books supplement each other, although each covers a common ground, but from different view-points. We venture to predict that Professor Rhodes's book in its subsequent amplifications will find its way into the library of every progressive practitioner.

The reviewer cannot refrain from mentioning the fact that the title of the book, as stated in the preface, was suggested by an article of his on this subject calling attention to the importance of teaching applied physiology as is taught applied anatomy, and with even more thoroughness, in every medical school.—J. M. T.

MODERN OTOLOGY: THE PRINCIPLES AND PRACTICE OF MODERN OTOLOGY. By John F. Barnhill, M.D., Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine; and Ernest de W. Wales, B.S., M.D., Associate Professor of Otology, Laryngology and Rhinology, Indiana University School of Medicine. Octavo of 575 Pages, with 305 Original Illustrations, Many in Colors. Philadelphia and London: W. B. Saunders Company, 1907. Cloth, $5.50 net; Half-Morocco, $7.00 net.

In the preparation of this book the authors have given careful consideration to the wants of students and practitioners in medicine, for whom it is primarily intended. Efforts have been extended to present a work which is modern in every respect, and during its preparation valuable assistance has been obtained from the personal instruction received from such eminent teachers as J. E. Sheppard, of New York; Dundas Grant and Percy Jakins, of London; Jansen, of Berlin; and Alt, of Vienna. In conjunction recent American and European literature has been freely consulted, although no attempt has been made to give a complete digest. The text is necessarily short, but ample to fulfill the promises of the authors in the title pages. The illustrations appear well selected and are to be commended. They are profuse throughout the book, and especially is this true of the chapter on the anatomy of the temporal bone where, in 62 pages devoted to this subject, there are some 60 illustrations. Bacteriology of the ear, a subject commanding much attention at the present time, is given due consideration. The diagnostic sign between the swelling of a furuncle in the external auditory canal and that due to the involvement of the mastoid is clearly pointed

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out. Careful and minute examination of all patients is strongly advocated to insure the proper treatment in each case, and in order to obtain the most satisfactory result possible in every instance.—R. B. S.

HYPNOTIC THERAPEUTICS IN THEORY AND PRACTICE. With Numerous Illustrations of Treatment by Suggestion. By John Duncan Quackenbos, A.M., M.D. New York and London: Harper & Brothers, Publishers. 1898.

The interest in psychotherapy is advancing, as is proper and right. This would only be desirable if the subject were studied attentively and from the proper sources. Dangers arise from over-enthusiasm and misdirection. The central purpose of the physician is to restore health not only in part but wholly, which includes bodily repair and psychic right direction. That the influence of the mind is powerful over the processes of the body is recognized by all practitioners, but in varying degrees. A considerable literature is now being produced, much of which is well worth the study. Dr. Quackenbos is prominent in this field, but gives evidence of being too pronounced an enthusiast and, therefore, his conclusions need to be accepted with caution. No one can read the book under discussion without gaining much important knowledge, but he goes too far in the field of the mystical.

We have reviewed in this Journal several books and monographs of value and it is difficult to single out one which may be recommended unreservedly. Fortunately for Dr. Quackenbos, he has had a medical education which gives him an added authority. He writes agreeably and is equipped with a breadth of experience attained by few.

It is a curious fact that medical practitioners are singularly inexact in their notions on psychiatry, and even worse in respect to what is labeled hypnotism. The reviewer recalls with sensations of chastening and confusion an occasion when he read a paper on the subject before a crowded medical assemblage, and noted the misapprehension which existed. Dr. Quackenbos defines hypnotism thus: "The superiority of hypnotic suggestion as an instrumentality for exalting human character over the conventional methods of instructing, reforming, and persuading to meritorious action" is thus as unique as it is astonishing. In cases of flagrant depravity, petition of the psyche for aid is tantamount to an ethical victory; and suggestion is the instrumentality whereby the man in need is appraised of the efficiency within him, and when so enlightened is inspired to work out his own salvation in his own objective life without conscious effort or struggle.

It is particularly desirable that the physician should understand the sub-conscious, and this he had better do by applying to direct psychologic sources, such as the charming and masterly book by Professor Joseph Jastrow bearing his title, and reviewed in these pages a little more than a year ago. Then and then only can he appreciate the variants, the complexities presented by the disturbed mentality of his patients, and himself adopt such recommendations as are within his powers and capacities.—J. M. T.

LIFE INSURANCE AND GENERAL PRACTICE. By E. M. Brockbank, M.D. (Vict.), F.R.C.P., Honorary Assistant Physician, Royal Infirmary, Manchester; Lecturer in Materia Medica and Therapeutics, Victoria University of Manchester. Octavo, 288 Pages. Oxford Medical Publications. London: Henry Frowde, Hodder & Stoughton, 1908.

This manual of life insurance examinations is replete with practical points as to the examination and selection of standard risks.

The consideration of substandard risks is full and, besides the usual matter, includes a chapter on life in the tropics as affecting the value of present and future insurance risks.

Chapters on racial expectancy of life, syphilis, malignant disease, and alcohol in relation to life insurance, and the influence of the various forms of albuminuria and glycosuria as affecting risks are particularly good and practical.

The opinions and deductions throughout the book are fortified with copious references. The usual tabulated matter is freely distributed throughout the book. The work is fully up to the high standard of the Oxford Medical Publications.—C. S. W.

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SURGERY: ITS PRINCIPLES AND PRACTICE. In Five Volumes. By Sixty-six Eminent Surgeons. Edited by W. W. Keen, M.D., LL.D., Hon. F.R.S.C. (Eng. and Edin.), Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume III. Octavo of 1132 Pages, with 562 Text-illustrations and 10 Colored Plates. Philadelphia and London: W. B. Saunders Company, 1908. Per Volume: Cloth, $7.00 net; Half-morocco, $8.00 net.

The third volume of this work includes the following subjects: "Surgery of the Head," by Harvey Cushing; "Surgery of the Neck," by E. Wyllys Andrews; "Diseases of the Thyroid Gland," by Albert Kocher; "The Nose and Its Accessory Sinuses," by Harmon Smith; "Surgery of the Larynx and Trachea," by George Emerson Brewer; "Surgery of the Thorax," by George Emerson Brewer; "Surgery of the Breast," by John M. T. Finney; "Surgery of the Mouth, Teeth and Jaws," by Edmund Owen; "Surgery of the Tongue," by John Chalmers DaCosta; "Technic of Abdominal Surgery," by John C. Munro; "Surgery of the Abdominal Wall," by John C. Munro; "Surgery of the Peritoneum and the Retroperitoneal Space," by John C. Munro; "Surgery of the Œsophagus," by George Gottstein; "Surgery of the Stomach," by A. W. Mayo Robson; "Surgery of the Liver, the Gall-bladder and the Biliary Ducts," by W. J. Mayo and C. H. Mayo; "Surgery of the Pancreas," by B. G. A. Moynihan; "Surgery of the Spleen," by B. G. A. Moynihan.

To say that this volume is worthy of its predecessors means much: no work on surgery in the English language has been published so far which shows so great a degree of excellence. This applies not only to the subject matter itself, but also to the manner in which it is presented by the publishers. Especially to be commended in this volume is the article by Professor Albert Kocher, of Berne, on the diseases of the thyroid gland, whose enormous experience in the surgical treatment of goiter has made him the greatest authority of modern times on this subject.

GOEPP'S STATE BOARD QUESTIONS AND ANSWERS. State Board Questions and Answers by R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Octavo Volume of 684 Pages. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $4.00 net; Half-Morocco, $5.50 net.

The object of this work is clearly denfined in its title: to supply a candidate for the right to practice in a given State the questions propounded by the Board of Examiners of that State. How far this will prove true it is difficult to tell, for the very fact that such a work is available will cause examiners to avoid the questions it contains, since it is their duty to obtain a fair estimate of the candidate's general knowledge—an aim which would be defeated if the latter were to depend solely upon set questions and answers in the preparation of his examination. This means that such a work would prove of great use but only if the candidate were to regard it only as a test-book, as it were, after carefully preparing his examination by a close study of the subject matter of his text-books. Interpreted in this light, Dr. Goepp's book is highly to be commended; it is prepared with considerable care, and will serve as an excellent "self-examiner."

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. By Olof Hammarsten, Late Professor of Medical and Physiological Chemistry in the University of Upsala. Authorized Translation from the Author's Enlarged and Revised Sixth German Edition, by John A. Mandel, Sc.D., Professor of Chemistry in the New York University and Bellevue Hospital Medical College. Fifth Edition, First Thousand. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1908.

The fifth American edition of Hammarsten's "Physiological Chemistry," a translation of the sixth German edition, is considerably larger than the preceding edition, a fact due to the great amount of labor and the important advances made in this branch of medical science. Fortunately the importance of bio-chemistry as a foundation of medical learning is being increasingly appreciated in this country. No better work on the subject is available than Hammarsten's, both as a text-book for medical schools and as an aid to investigators.

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Medical Bulletin Section

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Address

ADDRESS TO THE GRADUATING CLASS OF THE MEDICO-CHIRURGICAL COLLEGE.[1]

BY L. WEBSTER FOX, A.M., M.D.

GENTLEMEN:—I deem it an honor to be permitted to address you on this Class Day occasion. This day has, I am sure, a very warm place in the heart of the student. Graduating Day is a very formal and state occasion—cap and gown must be donned, your general demeanor must be dignified and you march to your places in the Academy to the strains of martial music. In many respects it differs materially from Class Day. On this occasion you must be gay, though a tinge of sadness is, I am sure, mixed with the joy. You are bidding farewell to the student days and entering the portals of the time-honored profession.

Doubtless these four years have been long and anxious ones for you. For four years you have been at almost constant study in the laboratories; in the dissection room; in the class rooms; at the clinics in the amphitheatre; and at the bedside of patients in the hospital. But they have come and gone. You are about to enter a new series of years that will be filled with their responsibilities and cares, and varied with successes and failures. Although compared with the years that are to come, the four that have just passed may seem insignificant, yet they have probably been the most important of your lives; years fraught with potency for your entire professional life. What you have done in them, and how you have done it, will determine your success or failure as a physician; for, the mental impressions of those years will be more enduring and significant than those of any other term of your lives.

[1] Class Day Exercises on June 5, 1908.

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But with all their cares and responsibilities the four years that have passed cannot fail to have been happy ones. During those years you have formed friendships with your classmates and professors that should remain while life continues. They have been especially happy, because they marked the time when you all lived together as a happy family in the home of your Alma Mater.

And now you are about to leave that home; to sever the ties and associations that have bound you together. You are ready to go out into the world to begin your life work. The joys of the present are, therefore, mingled with sadness. Possibly, nay, probably, some of you will never again return to your Alma Mater.

Your long, arduous work in the medical college is completed; the race is over; the goal is in sight; and you are about to receive the prize in the shape of a diploma that confers on you the right to practice the divine art of healing. Surely this is a joy that should more than out-balance the sadness begotten of severed ties and broken associations.

Towards the close of one's college life events crowd on the heels of events so closely that they come and go before time has been offered for their careful consideration. Have you not already found this to be so? First came the varied examinations, by bedside and in class-room, designed to test the thoroughness and accuracy of your preparation. But the finals had to come and they have been safely passed. Then came that dreadful meeting of the faculty in which the decision was to be reached whether they could conscientiously recommend you to the Board of Trustees as worthy of receiving the diploma which confers upon each of you the title of Doctor of Medicine, and which declares you to be fitted to practice medicine. This, too, has come and gone. You have been weighed in the balance and have not been found wanting, but as meriting the degree. It is now only a matter of form of the Board of Trustees of the College to-morrow to grant you that degree.

But there is still another obstacle; an obstacle more dreadful and formidable than any that has yet appeared; at least, it so seems to you if perchance you have permitted your imagination to run wild. I refer to the dreaded examination by the State Medical Board. It is not true, however, that these questions, as you may perhaps have imagined, are devised so as carefully to avoid the propounding of the questions you do know, and that your college professors think you should know, but rather for the purpose of discovering things that you do not know, and indeed, in all probability that the examiners themselves did not know until they resurrected them from a properly buried past. No, you are wrong in this belief. You will be surprised and pleased to find how easy these questions are. So this trouble, too, will soon have come and gone.

Even after all this has been done permit me most earnestly to advise you not to throw open your office and invite the public to come until you have obtained practical experience. There is a great gulf fixed in medicine between theory and practice; between the reception of knowledge and its

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application. Those who have gone before you, who now occupy positions in the front ranks of the profession could tell you, if they chose, of the many anxious days and nights they have spent at the beginning of their careers, when they had commenced practice in places at a distance from their College or from any reliable consultants. They have been placed in charge of a patient whose life lies trembling in the balance. A little intelligent effort may save it, but that effort requires for its direction a knowledge that either has never been theirs, or, if theirs, is so uncertain as to be useless for the time. They could tell you of their mental distress in not being sure as to just what is best to be done; of their inability to diagnose the case; or to be certain of its proper treatment after the diagnosis has been made. These men could tell you, if they would, how in their imagination, they have returned to their alma mater, but too often in the vain endeavor to recall the words of wisdom and advice that fell from the lips of professors and teachers who themselves had so often met in practice with those very difficulties. Those golden words of instruction seemed at the time to be unimportant. Perhaps they failed to give them that close attention their importance merited. They may have been slightly nodding, as I have seen one or two of you doing during my lecture. Of course, you have spent the previous night wrestling with your studies. Their brain may have recorded them, but now in the hour of their great need they are unable to recall the words, and this failure may result in the loss of the life which has been confided to their care.

I would, therefore, urge you as strongly as I can, to spend at least, one year—two would not be misspent—in hospital work before you enter into immediate practice by yourself. Leave nothing undone until you obtain an appointment as assistant resident physician, or assistant house surgeon, either in our hospital or elsewhere. Commencing to practice under these conditions, when doubts and perplexities arise, as they are sure to do, you can go to your chief physician or surgeon for the knowledge or skill that is lacking. The practical knowledge of medicine that you will acquire in this way, differs markedly both in its completeness and significance from the knowledge derived from the treatment of cases that exist only in the imagination. Moreover, such knowledge is so absorbed that it becomes a part of your mentality. It can never be forgotten, nor will it fail to come to you.

It is at this point in the career of the medical graduate, who has passed both college and state examinations, and has spent a year or more in the hospitals, that a mistake may be made that will seriously handicap his subsequent success, if indeed, it does not render it impossible. Do not permit yourself for a moment to believe that your knowledge is so complete that it cannot be increased. Continue your studies. Medical knowledge is ever on the increase; medical literature continues to multiply at so alarming a rate that it would require more than one's spare time to keep abreast with it, but do your best to prevent it from getting too far ahead of you. Besides studying books, make visits to clinics, and listen to medical lectures,

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as frequently as possible. Above all, keep your eyes on the great leaders in the medical and surgical world. Endeavor to familiarize yourself with new methods of treatment, with the latest pharmaceutical remedies; with recent discoveries in surgery and medicine. And how can one do this, you will inquire? Of course, no one can do all this thoroughly unless he has nothing else to do. But he can, at least, do his best. No matter what may be the condition of your finances, you should subscribe at least to *one* of the best periodicals, and failing this, you can get them in the libraries.

Probably some of you are saying to do all this one will need to hustle. Unquestionably so. There are others besides yourself who are marching onward in their efforts to reach success. Unless you endeavor to keep near the head of this procession you will soon be left so far down the line that you might as well be in some other part of the world, so far as your chances of obtaining a knowledge of the new things that are taking place in your profession are concerned. Unless you are a hustler—and a good hustler, you can never hope to win a prominent position. You must not be satisfied with being crowded and jostled among the rabble at its tail end. Here it is so overcrowded that you will find it difficult, if not impossible, to earn your living. Indeed, you may even find yourself looking with envious eyes on the more liberal pay which is accorded the laborer, but is refused to the cultivated mind that has labored so long, earnestly, and intelligently.

The world is full of shallow-minded, carping critics, who, though knowing little or nothing about their own affairs, nevertheless, think themselves competent to sit in judgment on others. These people may call in question the propriety of the doctor going outside his professional life to mix with the world. They may raise the objection that such a cultivation of the public, is at least at variance, if not, indeed, contrary to that unwritten code of ethics that should govern the medical world; that it is only another species of that direct advertising which is so strictly forbidden. I am sure, however, that the broad-minded, thinking men and women, whose judgment alone is worth considering will not be found among such critics.

It is to the credit of the medical profession that many of its most distinguished members are to be found occupying advanced positions on all the great social, religious and political questions of the day, as well as in the great questions of a more strictly scientific character. A participation in such interests has a tendency to broaden the intellectual activity. We find such men therefore, in their occasional spare moments, taking rest in change of work, and blooming out in the literary world in fiction and poetry; or we find them distinguishing themselves as political economists, reformers, and even at times as politicians, of the pure and unusual type that the world to-day stands so greatly in need.

Time passes rapidly. Before long you will, I trust, take your position in the first rank of the army that to-day contains so many of the world's hardest workers, greatest thinkers, and truest philanthropists. It is certainly worth your while to endeavor to do this. The ultima-thule has by no means been reached in medicine. There are yet many unknown worlds to be

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discovered; many causes of disease and untimely death to be ferretted out and conquered; many discoveries to be made that will cover the men who make them with laurels as undying as those awarded to Harvey, Morton, Jenner, Pasteur, Koch, Gross, Pancoast, DaCosta, and others whose names are familiar to you.

The position occupied by the physician in the community is equalled by few and excelled by none. In no other walk of life is such important work demanded. Selected as he is to guard the citadel of life the physician is left in charge of the most valuable thing his patient possesses. If that citadel be overthrown, what will all mere worldly goods avail? Moreover, the physician stands as close to the moral nature as does the clergyman, indeed, often far closer. It is the physician who is first sought when the defences of the citadel of life are threatening to fall at any moment. It is he who is frequently nearest, when the mind is beginning to fail and the soul is almost ready to quit the body.

There are certain matters affecting the public health in which the physician should take a prominent interest. Such, for example, as the means necessary for preventing the pollution of the water supply of our great cities; means for preventing the sale of impure food products; for providing the best methods for ensuring quarantine during epidemics; for teaching the public that vaccination is the only sure way for preventing the spread of small-pox. In all these, as well as in many others that will suggest themselves to you, you will do your share and will thus merit the praise the world will accord you as one of its greatest benefactors. Our great State, Pennsylvania, leads to-day in the questions of health and Dr. Samuel G. Dixon, who is at the head of the Department of Health, needs just such men as you to aid him in pushing forward his good work.

Since the physician is the great high priest who serves in the sacred temple of life, his character must be beyond doubt. To him are thrown open the sacred portals of the home; to him we unbosom the most private details of our lives. He must, therefore, possess a moral nature that is free from spot or blemish. His integrity must be beyond question. His intelligence and ability should never be in danger of overthrow by intemperance. So true is this that I think no one will question the fact that dishonesty, impurity, or intemperance should more relentlessly rule one out of the medical profession than any decision of an examining board, whether it be the examination of the College proper or of the State.

There has recently appeared a new coined word that has already taken a place in our language. As I understand it, this word is intended to describe a type of mind so muddled by money that it does wrong while honestly thinking it can only do right. It is the word "twilighter." While, as a rule, the members of the medical profession are not apt to become "twilighters" by being so muddled by amassed wealth as to be unable to understand what they are doing, yet it is not impossible that a limited class of "medical twilighters" may be called into existence by the peculiar conditions now existing. A muddling of the medical intellect may possibly arise by

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reason of the sudden and unexpected growth of the professional reputation, or from the applause attendant on continual success in special lines. This might lead to a lurking belief that they are so far in advance of their fellow workers that it is impossible for them to make mistakes. When this condition is reached, they have become "medical twilighters" of the most profound and objectionable type.

For my own part, I do not look for the coming of the "medical twilighter" except as an occasional abnormal product. There are to-day too many cases on record of physicians who have nobly sacrificed their lives for the world's good that they belong rather to the class to whom the Victoria Cross of Great Britain is awarded. You will understand my meaning better if I quote from a recent editorial in one of our leading papers:—

"England has gorgeous stars and jeweled insignia that she gives to foreign diplomats and rulers. But there is a simple decoration made of base metal that is more valued than the Garter, or the Ribbon of the Bath, or the Star of India. No king and no prime minister can gain it. The Victoria Cross bears the legend—'For Valor.'

"Germany gives jeweled orders away. There are black and red, and for all we know, blue, green and yellow eagles, made of gold and embellished with precious stones, but valued above all these is the Iron Cross, awarded only for a display of personal courage in the nation's service.

"Congress gives medals occasionally to our soldiers and sailors, but all must recognize that there are firing lines where there is no cannon or rifle shot, and that gunpowder is not needed for the testing of such heroism."

Alexander the Great is said to have wept because he had no more worlds to conquer. Alexander, by the way, might, I suppose, have been regarded as a species of "military twilighter." His brain had been muddled by the many worlds he had conquered. The world was not as small as he had pictured it in his imagination.

If any of you, like Alexander, have feared there are no worlds left for you to conquer in the name of medicine, I bid you take courage. You are entering the medical profession at a time when it seems probable that the discoveries that are yet to be made will prove vastly grander than those already made. There are great problems yet to be solved. You may live to see the great white plague, or pulmonary consumption thoroughly, if not entirely eradicated, or at least made amenable to treatment. You may live to see the malignant cancer cured without the knife. You may live to see such an improvement in medical practice and all the many sciences connected therewith, that the span of human life will be greatly lengthened.

I have sometimes wondered, in view of the great progress that has been made in the medical arts, as well as in the means these arts have provided for lengthening human life, whether in the future, and possibly in the near future, its span may not again be lengthened; not, perhaps to an average life of say 900 years and over, when Adam and his immediate descendants lived so long, but at least to 100 years. There is no need, therefore, that you should join with Alexander in weeping because there is no

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other world to conquer. If he is a benefactor who made one blade of grass grow where none grew before, how shall he be ranked who is to add ten, twenty, or more years to the span of human life?

There are events in life that mark epochs for the individual—such is this occasion. What life may hold for you depends upon yourselves and the use you make and have made of your opportunities. You will go out to find your own place and to carve your own destiny. I pray you may go forward to your lifework with courage. It has been a pleasure to address you in behalf of the Faculty, and in the name of the Faculty I extend to you the right hand of fellowship, and I bid you Godspeed in your calling.

Clinical Lecture

SCABIES.[1]

By JOHN V. SHOEMAKER, M.D., LL.D.

PHILADELPHIA.

Professor of Materia Medica, Therapeutics, Clinical Medicine and Diseases of the Skin in the Medico-Chirurgical College and Hospital, Philadelphia.

GENTLEMEN:—The extent of the morbid changes in this patient's skin are slight, owing to the fact that the patient is clean in his habits and is in good physical condition. The disease is entirely local and we are obliged to make a diagnosis from the subjective symptoms in conjunction with the few lesions present.

The patient complains of itching and crawling sensation especially so at night when he has retired and gets warm. The parts involved are the groins, scrotum, lower portion of the abdomen and between the fingers. On close examination with a strong lens, a number of typical cuniculi are seen in the groins and over the abdomen. Also a number of excoriations which are due to the patient scratching the parts. No other lesions being present nor is there any constitutional disturbance that would possibly cause such intense itching as the patient describes.

Diagnosis.—This is undoubtedly a case of scabies. The typical cuniculi with the symptoms of itching and crawling sensation after retiring are all-sufficient for making the diagnosis. However, the disease is only in its early period of contagion, consequently the absence of lesions. When the female ascarus first obtains lodgment upon the skin it at once penetrates the horny layer of the epidermis, forming a canal or cuniculus in which she lays her eggs, to the number of twenty-four to fifty, while the male wanders over the surface or hides among the scales or crusts. In a short time the ova

[1] Delivered in the Clinical Amphitheatre, Medico-Chirurgical Hospital.

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in the cuniculi are hatched, young mites come to the surface, become impregnated and in their turn burrow, forming vesicles, papules and pustules, which, as a rule, first appear between the fingers. Other regions are likewise involved. In the course of from two to three weeks the disease is fully developed and from the irritation produced by the burrowing of the mites and the indulgence of the patient in scratching and tearing of the integument, lesions similar to eczema follow. The female ascarus may sometimes be caught by inserting a needle into the white speck at the end of the cuniculus. The insect is never found in the vesicle, but in the little white speck mentioned.

Scabies closely resembles, in symptoms eczema and pediculosis and with which, in consequence, it is liable to be confounded. To complicate matters still more it is possible that scabies may sometimes co-exist with eczema or pediculosis. There are, however, certain peculiarities from which we can readily distinguish a differential diagnosis.

Scabies.	*Pediculosis.*
1. Parasite not easily recognized on the clothing.	1. Parasite readily found on the clothing.
2. Absence of "nits" upon the hair.	2. Nits present upon the hair.
3. Parasite small, hardly noticeable by the naked eye.	3. Parasite larger and readily noticeable by the naked eye.
4. Predilection for groins, penis, thighs, lower abdomen and between fingers.	4. Predilection for the hairy portions of the body.

Scabies.	*Eczema.*
1. Predilection for the groins, penis, thighs, lower abdomen and between the fingers.	1. Predilection for the flexor surfaces of the limbs, also face and scalp.
2. Vesicles sparse and isolated.	2. Vesicles congregated.
3. Vesicles torn from scratching.	3. Vesicles rupture spontaneously.
4. No infiltration of the skin involved.	4. Infiltration of the parts involved.

Pathology.—The morbid condition of the skin depends upon the physical condition of the individual affected, upon whether or not he is naturally possessed of a sensitive skin and upon the duration of the disease, and upon the amount of scratching that has been indulged in by the sufferer. From the burrowing of the itch-mite there is produced a slight inflammation, which, on scratching the surface becomes excoriated and may become infected, producing active inflammation, with lesions similar to those seen in eczema. In the advanced stages of the disease the lesions present usually are vesicles, papules, excoriations and sometimes pustulation.

Etiology.—It is a parasitic disease caused by the ascarus scabiei, which is an animal parasite. The disease is contagious and attacks all classes, all ages and both sexes. It affects the healthy as well as the unhealthy, but thrives better, however, upon the skin of the unhealthy.

Women are more often affected than men, because of their being more accustomed to sleep together, which is the most frequent way of transmitting

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the disease. Shaking hands is another way by which the disease is transferred, or by wearing articles of apparel worn by a person thus affected.

Treatment.—The treatment of scabies is simple. A cure can entirely be accomplished by external applications. Such drugs should be selected that will destroy the parasites, their eggs, and at the same time relieve the secondary eruption. The following combination will serve well for this purpose and has, in many instances, given immediate relief and brought about a cure in from one to two weeks' time:—

℞ Beta-naphtholis ..... gr. xx.
Sulphuris sublimati ..... ʒj.
Balsami peruvianæ ..... fʒj.
Unguenti zinci oxidi ..... ʒj.

Misce. fiat unguentum. Signa.—Apply locally twice daily to the parts affected.

We shall request the patient to take a hot bath every second evening, after which freely apply the ointment before retiring.

It is of importance that, after the disease has been cured, the clothing should be exposed to a heat of 212° F., in order to destroy any parasites which may adhere to them and thus prevent renewal of the affection.

Original Articles

TREATMENT OF EARLY CASES OF ECTOPIC PREGNANCY. BEFORE AND AFTER RUPTURE.[1]

By JOHN A. McGLINN, A.B., M.D.

Assistant Professor of Gynæcology in the Medico-Chirurgical College, Philadelphia; Gynæcologist to St. Agnes' Hospital, Philadelphia.

Before Rupture.

Authorities seem well agreed that the only justifiable course is an abdominal section with the removal of the gestation sac. Thus; Webster, "Text-Book of Diseases of Women," page 669, says: "As soon as the diagnosis is established the patient should be kept at rest in order to avoid any form of exertion that might bring about rupture of the gestation sac. Abdominal section should be carried out and the gestation sac removed." Williams' "Obstetrics," page 554: "As soon as an unruptured extra-uterine pregnancy is positively diagnosed its immediate removal by laporotomy is urgently indicated, since rupture may occur at any time and the patient die from hæmorrhage before operative aid can be obtained. The importance of immediate operation cannot be too strongly emphasized and all methods

[1] Read before the Philadelphia Obstetrical Society, March, 1908.

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of treatment which aim to destroy the fœtus and thus terminating pregnancy without operation are absolutely unjustifiable." Dudley, "Principles and Practice of Gynœcology," page 493: "The tube and its contents should be immediately removed. Only by this means can the woman be protected against the extreme peril of continued tubal gestation. The danger of the operation is not greater than the removal of the uterine appendages under other circumstances and the technic is the same. In very many cases tubal pregnancy is unrecognized until the abdomen has been opened on the diagnosis of a supposed hydro-salpinx or pyo-salpinx. This fact, as Penrose says, emphasizes the value of the rule to operate for all gross lesions of the tube." Kelly, "Operative Gynœcology," Vol. II, page 450: "On account of the imminent danger to the life of the mother, extra-uterine pregnancy in the early months must be looked upon much as a malignant growth (Werth), and it is only from the seventh month of pregnancy, when the child is viable, that it has any claims to consideration."

Other forms of treatment looking to the destruction of the embryo thus terminating pregnancy have been advocated from time to time. The evacuation of the liquor amnii has been practiced by Simpson and Braxton-Hicks. This plan of treatment is as difficult as extirpation of the sac and is far more dangerous. The injection of strychnine, ergot, morphine, etc., into the sac have been used, but even though the fœtus should be destroyed the damaged tube would be left to invalidate the mother and the danger of poisoning and septicæmia are so great that the method need only be mentioned to be condemned. Electricity has probably had more adherents than any other of the non-operative measures, but in this day of advanced surgery it is hardly worthy of serious consideration.

The only claim that non-interference in cases of early unruptured tubal pregnancy can have is in the interest of the child. Experience and statistics so conclusively prove this position is untenable that I do not believe it ever to be a justifiable course. Experience of all surgeons has shown that very few of the many cases go to viability, and statistics prove that in those cases that go to term, the children either survive but a short time or are seriously defective in development. Bland-Sutton and Giles state that: "The tube usually bursts at some period between the 6th and 10th week following impregnation; rarely is the accident deferred until the 12th week." Henning reports 95 cases, as follows: "Rupture occurred in the 1st month in 5 cases, in the 2d month in 22 cases, in the 3d month in 18 cases, in the 4th month in 23 cases, in the 5th month in 8 cases, in the 6th month in 1 case, in the 7th month in 1 case, in the 8th month in 6 cases, in the 9th month in 1 case, in the 10th month in 9 cases and beyond the 10th month in 1 case." Von Schenk reports 141 cases: "Rupture occurred in 1st month in 13 cases, in the 2d month in 67 cases, in the 3d month in 28 cases, and in the 4th month 12 cases." Schauta reports 87 cases: "Rupture occurred in the 1st month in 15 cases, in the 2d month in 29 cases, in the 3d month in 23 cases and in the 4th month in 10 cases." In Mackenrodt's 38 cases: "Rupture occurred

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in the 1st month in 6 cases, in the 2d month in 23 cases, in the 3d month in 5 cases and in the 4th month in 4 cases."

Harris collected from literature 37 cases of viable ectopic fœtuses delivered by celiotomy from 1809 to 1889, with a maternal mortality of 28. Of the children but 5 survived the first year. The majority died in less than 24 hours. From 1889 to 1896 he collected 40 cases. Of these 27 mothers recovered, showing the advance in surgery. Only three children are recorded as having lived one year.

Ectopic pregnancy is a comparatively common condition and continuance to viability such a rare condition and associated with such dangers to the mother and child, that I do not believe it is ever justifiable to delay operative interference.

Ruptured Tubal Pregnancy.

Until the recent studies of Robb, Simpson, and Stilwagen, the consensus of medical opinion was in favor of immediate operation. Kelly in his most recent work, "Medical Gynœcology," says: "If the patient has been suddenly smitten down with severe abdominal pain and hæmorrhage, if there is evidently some kind of a mass in the pelvis while she is markedly anæmic, it is best to consider the diagnosis while getting the instruments out of the kit to open the abdomen and stop the hæmorrhage. There should be no academic discussion under such circumstances, for such cases brook no delay and he who acts or secures action most quickly will save the most lives. It is self-evident that in the presence of bleeding which will eventually destroy life every minute is precious. Ashton, "Text-Book of Gynœcology," page 583: "The indication is to operate in every case without unnecessary delay whether the tube has ruptured into the peritoneal cavity or between the folds of the broad ligament. We must not wait for reaction from collapse or shock to set in before operating, as the patient may perish in the meantime from loss of blood." Hirst, "Text-Book of Diseases of Women," page 440: "After rupture the patient's only hope lies in an immediate abdominal section, evacuation of the blood from the peritoneal cavity, the ligation of the blood vessels supplying the sac and its complete removal." Ladinski, *American Journal of Obstetrics and Diseases of Women and Children*, Jan., 1908: "Hæmorrhage from rupture I regarded in the same light as hæmorrhage from any other source and I have always followed the universally recognized axiom of surgery that hæmorrhage should be checked as quickly as possible. I have therefore operated where there was no pulse at the radial and at times the operation was done when the patient was absolutely unconscious and didn't require anæsthesia, either general or local." He reports 107 cases with one death due to tertiary hæmorrhage three days after operation in an "absolutely undoubted case of hæmophilia." The writings of Webster, Findlay, DeLee, Dorland, Bland-Sutton and Giles, Reed, Montgomery, Dudley, Baldy, Pryor, Williams, Norris, Penrose, Kelly and Noble, Crossan, Schaffer and Kelly are practically in accord with these views.

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Opposing these teachings Simpson, in *Surgery and Gynæcology* for November, 1907, says: "It is my firm conviction that the actual facts do not warrant the conclusion that 70 per cent., or 60 per cent., or even 10 per cent. of those who sustain a rupture of an ectopic gestation will of necessity bleed to death. If this view be correct, then immediate operation should not be done unless all conditions are favorable for a successful issue." And again he says: "Doctor Karl Hartog, of the Landus Clinic, tells me that he made a complete review of the German statistics and finds that no more than 5 per cent. of the victims of ectopic pregnancy die from hæmorrhage at the time of rupture." Stilwagen, *American Journal of Obstetrics and Diseases of Women and Children*, January, 1908, says: "Many pleas have been made for the early recognition of ruptured ectopic pregnancy, but I firmly believe that delay in diagnosis has been the means of saving many lives. Shall we operate at this time? No one will deny that it is a most grewsome time to open the abdomen. Surgeons will agree that it is difficult to conceive of a more unfavorable condition under which to enter the peritoneal cavity than already existing profound shock and hæmorrhage. Granting that it is possible to carry out a rigid asepsis in spite of the haste and difficulties with which these operations are performed, and that the retained blood as a culture medium for organisms introduced at the time of operation is not a menace, there is one point which I believe is not considered seriously enough and that is the risk of infection from the tube itself. In addition to about 20 cases of my own I have had the opportunity to observe at least as many more in the hands of other physicians, and in the event of rupture or abortion the invariable rule has been for the hæmorrhage to cease. The firm blood clot, the intestinal adhesions and the alert omentum so limit the blood space as to preclude the probability of a fatal hæmorrhage." He reports 11 cases with no mortality. Robb, in *Journal of Obstetrics and Gynæcology*, July, 1907, advocates delay. His conclusions are based on 20 cases and experiments on dogs after cutting and resecting the ovarian and uterine arteries. One of his patients died 10 days after operation from volvulus, and two were discharged from the hospital with adherent pelvic structures. Neugehauer reports 135 cases treated expectantly with one death. Winter and Winkel with the same plan of treatment had no deaths, and Thorn's mortality was 1 per cent.

While the experience of the men who advocate the expectant plan of treatment is, in a general way, in accord with those who have seen many of these cases, their conclusions are, I believe, dangerous. We must not forget that papers and discussions in societies such as ours mould medical opinion and, while, in spite of deliberations and views expressed, the trained surgeon will rely on his own judgment in the treatment of an individual case, the rank and file of the profession are apt to accept, at least until the question is definitely settled, that side of the problem which promises most with the least trouble. If such tenets as "patients do not die from hæmorrhage as the result of ruptured tubal pregnancies" and that "delay is always best" become accepted, I believe that many valuable lives will be sacrificed.

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To consider this question let us take up first the question of statistics. Schauta in the following classes of cases: *a*, Unruptured tubal pregnancies; *b*, cases of rupture without severe symptoms; *c*, cases of rupture with developing infection, has shown that the mortality, when the expectant plan of treatment has been followed, was 65 per cent.; while the mortality in cases treated by prompt surgical intervention is less than 6 per cent. These figures are so at variance with the views and figures quoted above that it is self-evident that a statistical study of the mass and jumble of figures as now burden literature could be of little value. No reliable statistics could be compiled of those cases of rupture or abortion which die and in which the diagnosis has not been confirmed by operation or autopsy. So, too, in those cases treated by the expectant plan and have gotten well where the diagnosis has not been confirmed by operation. The only figures that would have any value would be a study of the cases treated by immediate operation and those by the expectant plan where the diagnosis was proved by operative and pathologic findings.

Secondly.—Do cases die of hæmorrhage? Undoubtedly. A number have been reported, to which I desire to add one case which occurred in my own practice. Mrs. R., age 34 years, married, no children; was admitted to the Medico-Chirurgical Hospital to be treated for severe dysmenorrhœa. A diagnosis of acute anterior flexion of the uterus was made and she was dilated and curetted in June, 1905. She left the Hospital in ten days and her physician reported that her next period was without pain. Late in August of the the same year, he called me on the telephone and gave the following history of the case. She missed her August period two weeks previously, but bleeding had returned and she had an attack of pain that morning in the left inguinal region for which he had just been called to prescribe. I suggested the possibility of tubal pregnancy and advised that I see her at once prepared to operate. He stated that she seemed in good condition and that there was no evidence of shock. He said he would see her again after he had made an urgent call and would notify me of her condition. Two hours later he told me that the patient was dead. When the abdomen was opened it was found filled with blood from a ruptured tubal pregnancy. Findlay reports a death from hæmorrhage within three hours from the beginning of the attack.

Thirdly.—The studies of Robb in regard to the arrest of hæmorrhage in dogs have little bearing on the subject at issue. If dogs do not die from hæmorrhage after the ovarian and uterine arteries have been severed or resected, women with ruptured tubal pregnancies do and experiments on animals with normal vessels will never prove the contrary. In this connection it is well to remember that it is a long cry from cutting a small vessel, normal, with the power of contraction to control bleeding and that which occurs in a ruptured tubal pregnancy. In the latter the bleeding does not take place from a torn or cut vessel. There is no protecting maternal decidua in the tube and the chorionic villi penetrate the tube and lie just below the peritoneal coat. While the tube becomes thickened and increases in vas-

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cularity the muscular coat does not hypertrophy. With increased vascularity, large bleeding surface and lack of muscularis there is every factor present for profuse hæmorrhage to occur.

Some of the advocates of the expectant plan of treatment say that it is shock, not hæmorrhage that kills the patients. We ask, what causes shock? Surely it is hæmorrhage and there must have been a time in every fatal case that had hæmorrhage been controlled, shock would not have been sufficient to have caused death. Again if our teaching be correct we are never justified in resorting to extreme measures to combat shock unless the hæmorrhage has been controlled by a clamp or ligature. If we accept Simpson's figures that 5 per cent. of ruptured tubal pregnancies die as the result of hæmorrhage, I firmly believe that all these cases could be saved by prompt surgical intervention.

Fourthly.—It is important to study the cases of those who advise the expectant plan of treatment, to see how illogical their conclusions are. For example, in Stilwagen's series of eleven cases but two were seen during collapse following rupture. One case was admitted to the hospital the day following supposed rupture but showed no evidence of shock. Eight of his cases were old ones. Figures such as these do not prove the efficiency of delayed operation. They only show what has long been known, namely, that a certain proportion of cases of rupture, probably slow leakage, do not die of hæmorrhage. It has been our experience and I imagine it is true of all surgeons that the majority of cases seen are old ones. This only proves to my mind that the subject of ectopic pregnancy has been sadly neglected. It has been my experience that the general practitioner rarely makes a diagnosis of tubal pregnancy and while he may be familiar with the symptoms of the condition rarely gives it a thought. I have no doubt, though it cannot be proved, that many cases of ruptured ectopic pregnancies die and the cause of death has been given as many varied conditions. To my mind the most potent result of the present activity in the discussion of this subject will be the awakening of the profession to its existence and importance.

We believe in immediate operation for the following reasons:—

1. Because a certain proportion of cases die of hæmorrhage who could be saved by prompt surgical intervention.

2. Because delay increases the danger of death from sepsis.

3. Because grave pelvic and abdominal conditions such as adhesions, intestinal obstruction and walled off abscesses may result from retained blood and infection.

1. I admit that there are many cases that come under observation that indicate a cessation of hæmorrhage and a lessening of shock and where it might seem wise to wait for reaction before operating but even if these cases survive our judgment, I don't believe it is an evidence of diagnostic skill any more than a few cases of appendicitis cured without operation would redound to the wisdom and foresight of the medical attendant. The following case illustrates the danger of waiting: Mrs. C. De B. had her first attack on a Thursday. No diagnosis was made but she was put to bed. On the following

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Monday morning she had her second attack when I was called to empty the uterus for a supposed incomplete abortion. A diagnosis of ruptured tubal pregnancy was made and she was moved carefully to St. Agnes' Hospital. As she showed no evidence of shock operation was postponed until late in the afternoon of the same day. Six hours after reaching the hospital she had another attack and went into almost complete collapse. Without waiting for reaction the abdomen was opened and found filled with fresh blood and a few organized clots, the right tube was bleeding. The tube was grasped with forceps to control the bleeding and the abdomen filled with salt solution. Under stimulation she reacted and the operation was completed. She made a good recovery. It may be argued that the moving may have dislodged the clot and caused the renewal of the bleeding, but it seems to me that if that had been the case the hæmorrhage would have occurred immediately and not after a lapse of six hours.

2. These cases are in danger of infection from the tube. In spite of Webster's view that the fecundated ovum could only develop on tissue capable of undergoing genetic action, and that the occasional development of the ovum in other structures than the uterus was a reversion either in structure or reaction tendency to an earlier mammalian type, and that conditions usually given that prevent the fecundated ovum from reaching the uterus were accidental, the majority of authorities still believe that tubal inflammation is one of the most frequent causes of the condition. Stilwagen states that in 34 cases of fatal operation, 14 died of sepsis. In the last series of 24 cases on the service of Dr. W. Easterly Ashton, at the Medico-Chirurgical Hospital, 2 died of sepsis. Three cases were profoundly septic when admitted to the Hospital. In the old cases of pelvic hæmatoma there is always danger of infection from the rectum and a large abscess may result and endanger the life of the woman. Again, if there has been free bleeding, clots adhere with such tenacity to the intestines that they cannot be removed and there is always danger of subsequent infection or adhesions.

3. There is danger of intestinal adhesions and obstruction and patients may be discharged with pelves so badly crippled by adhesions as to invalidate the women for the rest of their lives. In Robb's series of 20 cases one patient died on the tenth day from volvulus and two were discharged with adherent pelvis structures. In our last case of an infected old pelvic hæmatoma from a ruptured tubal pregnancy the patient was discharged with her pelvic structures absolutely fixed. Such results compared with those of immediate operation refute the value of delayed operation.

Treatment.—Except in those cases of pelvic hæmatocele I believe the abdominal route is superior to the vaginal. It offers many advantages. It is quicker, the bleeding point can be reached and controlled more surely and the toilet of the peritoneum can receive proper attention. I cannot endorse the views of those who favor plastic work on the ruptured tube even though the patient is in good condition and the extra time needed for the operation is not a menace to life. I cannot see why a tube that has already proven its inability to properly perform its function should be left to invite a repetition

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of its offence. Every effort compatible with a due regard for the patient's safety should be made to perform a complete operation. Where there is free blood in the pelvis and lower abdomen it should be removed by sponging. Where the entire cavity is filled with blood I irrigate with normal salt solution as I believe that it is the quickest and surest way to remove the blood and at the same time it stimulates the patient and permits more thorough work. Where clots have become adherent to the peritoneum and intestinal walls, I believe it is a waste of time to attempt their removal, as they become so tenacious that it is impossible to dislodge them without great danger of injuring the integrity of the gut. I do not believe that it is wise to allow free blood to remain in the peritoneal cavity under the mistaken idea that it will be reabsorbed into the circulation. Necessity of haste may compel this procedure at times, but it should be done with regret and not with intent. Except in cases where infection is already present I do not drain. Drainage in these cases will not prevent infection but will rather add to the danger particularly where glass or rubber tubes are used. Intra-vena clysis of normal salt solution is invaluable in the treatment but care must be exercised in its employment. It should never be used to combat shock unless the abdomen is to be opened at the same time to control hæmorrhage. It may so increase blood pressure as to dislodge the clot and induce further bleeding. It is our rule to start the operation for transfusion before beginning the abdominal operation. So soon as the vein has been entered by the canuala and the flow has started the abdomen is rapidly opened and the ovarian vessel clamped. This, I believe, is a very important rule as the operation, though a minor one, is often beset with many difficulties and it frequently takes considerable time to complete the operation, especially where one has to rely upon a resident physician who has not had the technic training to handle instruments with dexterity. After operation, if the condition of the patient requires it, a second transfusion is given in the vein of the other arm. Frequently we resort to hypodermoclysis in conjunction with transfusion, but we never use it alone at the time of operation to combat shock.

In closing let me say that while haste is necessary we have always found time to carry out a strict aseptic technic and have not had any cases of sepsis from operation.

113 South Twentieth Street, Philadelphia.

ALNUS SERRULATA.

By J. M. FRENCH, M.D.

MILFORD, MASS.

THERE are a number of species of alnus which possess medicinal virtues, their properties apparently being of a similar nature. As to which of these is best adapted for medicinal purposes, authorities differ widely in their opinions. The United States Dispensatory, edition of 1905, states that the

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Alnus Glutinosa, common European Alder, Black Alder; Alnus Rugosa, Koch, (Alnus Serrulata, Wild), or American Alder; Alnus Incana, Wild, or Tag Alder, are all of them tonic and astringent, and have been used in intermittent fever, the bark being the part used. According to Eitner, the bark contains from 16 to 20 per cent. of tannic acid, which, however, appears to differ from that of galls and oak bark, as it does not yield glucose when acted on by sulphuric acid. Others state that it is resolved by sulphuric acid into alnuine red and sugar.

According to the American Dispensatory, Alnus Serrulata, or Alnus Rubra, common names tag alder, red alder, black alder, smooth alder, common alder, natural order betualceæ, is a shrub or small tree indigenous to the United States, which grows abundantly from the northern part of New England to the western border of the Great Lakes and southward. It abounds in swamps and wet places, growing in clumps and thickets along the borders of streams, and reaches a height of from ten to fifteen feet.

The stem is straight, the leaves smooth, obtuse, serrate, round or blunt at the apex. The flowers are of a reddish green color, and make their appearance in March or April, before the leaves have expanded. There are two kinds of flowers, the pistillate, which are borne on an erect, and the staminate, on a drooping catkin. The fruit is ovate, and persists through the winter, giving rise to the name "tag alder." The bark is brownish gray, inodorous, and has a bitter, astringent taste. This is the part used in medicine, and its active constituents are tannic acid, an oil, and a resin.

The bark of the alnus possesses the usual properties of an astringent bitter. When taken into the stomach, it stimulates the gastric mucous membrane and increases the flow of gastric juice, aiding digestion and assimilation. Shoemaker says it is used for its astringent effects chiefly in the form of fluid extract or infusion as a mouth-wash for spongy gums, a gargle for sore throat, an injection in leucorrhœa, and for applications to ulcers. Internally, it has been given in diarrhœa and hæmaturia. It is reported to have alterative effects, and has been used successfully in scrofula, syphilis, and some cutaneous diseases.

Blair, in his recent work on "Materia Medica and Therapeutics," says that in large doses of the fluid extract (20 to 60 minims), it is alterative and tonic, improving nutrition and elimination. In small doses it has given moderate satisfaction as an alterative in pustular and acute eczematous diseases of the skin.

Felter and Lloyd say that it powerfully stimulates retrograde metamorphosis of tissue, and increases waste. It exercises a tonic action on the mucous surfaces. When applied locally to the mammæ, the leaves are reputed to decrease the lacteal secretion. The decoction stains the skin. It is a valuable agent in scrofulosis, with glandular enlargement and suppuration. It is recommended by Scudder in superficial diseases of the skin and mucous membranes, when taking the forms of eczema or pustular eruptions. It is of great utility in impetigo, herpes, prurigo and scorbutus. Good re-

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sults are obtained with it in boils, especially when they come in successive crops. It is a good agent in many kinds of passive hæmorrhage, particularly in hæmaturia, for which a decoction of the cones is recommended. Ayer reports cases of hay fever cured by alnus. He prepares a distillate similar to that of hamamelis, and snuffs it up the nostrils, or applies it with an atomizer. He also recommends it as an antidote in rhus poisoning, and as a remedy in gonorrhœa.

The specific indications for alnus, as given by Felter and Lloyd, are as follows:—

(1) To improve nutrition and increase waste.

(2) Of especial value in scrofula, with feeble vitality.

(3) In chronic skin diseases with scaly or pustular eruptions.

Waugh, speaking of the concentration, alnuin, gives its uses thus:—

To clear the complexion of women who are sallow, except when menstruating. Increases waste and stimulates digestion; for eczema and superficial skin diseases generally. It probably washes out the products of waste, and increases the solid constituents of the urine.

Alterative, styptic, emmenagogue, resolvent, tonic astringent. For scrofula, skin diseases, rheumatism, hæmorrhages, syphilis, imperfect digestion.

Boericke thus states its uses as understood by the homeopathists:—

Red alder has some reputation as a remedy for skin affections, glandular enlargements, and indigestion from imperfect secretion of gastric juice. It stimulates nutrition, and thus acts favorably upon strumous disorders, enlarged glands, etc.

Female.—Leucorrhœa, with erosions of cervix, bleeding easily. Amenorrhœa, with burning pains from back to pubis.

Skin.—Chronic herpes. Enlarged sub-maxillary glands.

It will be seen that the uses of alnus are substantially the same as given by all schools and systems of medicine. The special need of this plant is a more careful study from all points of view. Its prime indication is to increase waste and stimulate nutrition. Its special affinity is for the skin and mucous membranes.

The usual dose of the powdered bark is ten grains, to be taken several times a day, in decoction or infusion. The fluid extract is used in doses of from twenty to sixty minims. The specific medicine of the Eclectics is an excellent preparation, and is used in doses of from one to sixty minims. The concentration or purified extract, known as alnuin, contains all the active constituents, and well represents the medicinal properties of the bark. It is prepared in the form of soluble granules of $\frac{1}{12}$ grain each, the usual dose being from one to two grains daily, in divided doses. As it has no poisonous action, there is no absolute maximum dose. It is used by the homeopathists in strengths varying from the tincture to the third potency.

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Editorials

COPPER POISONING.

Copper poisoning, some years ago, was much more common when the metal was comparatively cheaper; hence it was more largely used in making cooking utensils for family use. Many cases of poisoning were directly traced to the contamination of food prepared in a copper utensil, and by chemical investigation it was found that, unless these utensils were kept very bright and clean, they would give rise to poisoning, by the formation of verdigris, a basic copper acetate.

Recently in the village of Pekin, Niagara County, New York, at the annual commencement exercises, ice cream was served, the custard of which was made the night before and thoughtlessly left standing over night in a large copper boiler. The ice cream was made the following morning and that afternoon served to between seventy and a hundred children and adults in attendance at the exercises. Before the exercises were over a number were taken ill. They hurried to their respective homes, followed by others who did not feel well. Soon the entire party had gone and many became seriously ill. No one died, but some had a hard fight to win against death. The physicians agreed that the ice cream was the cause of the trouble and that had the custard stood a little longer until the poison had grown stronger, many deaths would have followed.

There is really no occasion for such accidents to happen. Who does not know the poisonous action of copper and of the danger of using copper-lined utensils to prepare food stuffs? Such accidents are due only to carelessness and thoughtlessness.

Copper is sometimes added to pickles to make them of a brighter green color, a fraud which can readily be detected by placing a blade of a knife, or polished piece of steel in the liquid; if it contains copper, there will be a deposit of metallic copper upon the iron in the course of a few minutes. It is held that the very small amount of copper that would be introduced into the system by eating such a pickle would be only a mere fraction of a grain and not enough to cause any symptoms. No matter how small the amount of copper may be in the pickles, yet no one will be satisfied to know that he is eating such an active poison.

A far more dangerous source of poisoning is found in the wall-paper pigments containing copper arsenite, which is very poisonous. It is not only the green colors that are dangerous, but all vivid colors, such as scarlet, crimson, or lake. It is especially velvet or embossed papers that are likely to be loaded with pigments and these should never be used for a dwelling-house unless first tested and found to be free from copper or arsenic by the ordinary tests for those poisons.

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VACATION.

THIS is the time of the year when every one feels that he must have a vacation. Even the "idler" wants a change of scene, and many, by force of habit rather than necessity, spend a month or two at some summer resort to recuperate and gain additional strength. But how many who really need recreation and rest do receive any benefit at all from their vacation. The greater number of them secure less sleep during this period than they do while engaged in their daily occupation. The time is spent in sight seeing, amusements of all sorts, dancing and parties. There is no real rest at all. The body is simply further depleted of its energy so much needed by those who are in need of a true vacation. Many dissipate more during this supposedly period of rest than at other times, meals are eaten at irregular intervals often consisting of indigestible and unwholesome food and alcoholic beverages are taken in excess. The consequence is over-stimulation and fatigue of the vital organs with sluggish and indifferent emunctories, and at the end of one month's vacation, two months' recuperation under medical advice is a necessity.

The different forms of amusements at most summer resorts have their detrimental effects upon the human organism. It seems that the more dangerous the amusement, the more it appeals to the public. The strain upon the nervous system by participating in such amusements as the scenic railroad, toboggan, flying machines, etc., etc., is much greater and more harm wrought to the human organism than most people or even physicians imagine. By these pernicious amusements, mental and body energy are destroyed instead of being replenished. The purpose of a vacation should be for conserving one's own physical powers and to store up abundant energy to increase the activity of the body functions.

How can this all be accomplished during a month's vacation? The answer is rest and change of scene. Real rest, from eight to ten hours' sleep daily. The habits must be regular and at stated intervals. Exercise should be light, not taxing to the nervous or muscular system and never carried to the point of fatigue, or else it becomes work. The food must be nutritious, wholesome and above all, easily digestible. During vacation the body should be flushed out well by drinking plenty of good water and frequent bathing.

The selection of a proper place for a successful and beneficial vacation should be one where an entire change of surroundings and habits can be obtained. The busy city practitioner, the lawyer, the banker, the merchant, the clerk, etc.,. should get away from all excitement. He should go somewhere into the country, among the birds, trees and flowers; where he can fish and hunt and breathe in the good, pure country air. On the other hand, the country doctor who lives among the birds, trees and flowers, will find the most beneficial recreation where there is excitement, as at the seashore or in the city, where he can, at the same time, gain information as regards

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the latest ideas on surgery and in medicine, by visiting the hospitals and attending clinics.

Probably to secure complete rest and at the same time get the very best air, is by taking a long ocean voyage to some foreign country. Now-a-days many physicians and business men spend their vacation in this way. They not only secure the necessary rest, but at the same time, in a pleasant and agreeable way, increase their skill to fulfill their respective duties. The benefit obtained from a social point of view is also worthy of its consideration.

The man who continuously remains at home, in the same routine of business, will necessarily get into a rut, and is bound to remain at a "standstill" in his business. The hardships of the medical profession are not conducive of longevity, and the temporary change of scene and environment, away from care and responsibility for a short time each year will fill one with new energy and determination to do just a little bit better work than previously.

Materia Medica and Therapeutics

ACUTE ABSCESSES: A METHOD OF OBTAINING RAPID HEALING.

Dr. J. Phillips states that if all the dead material in a localized abscess is removed and means taken to prevent the collection of further dead material in the abscess cavity to act as a culture medium, rapid healing will follow. He gives the following rules: 1. Cleanse the skin as in operating on sterile tissues. 2. Make an incision long enough to permit of the pus being freely evacuated and the pyogenic membrane rubbed clean and smooth with gauze wrapped round the finger. 3. Having emptied the abscess cavity as completely as possible, pack it tightly with gauze (we use 1 in 1000 mercury perchloride gauze, dry) and apply a wool dressing and bandage as firmly as possible. 4. At the end of forty-eight hours remove the packing and dress the wound as if it were a simple incision; that is, do not pack or drain at all, but simply fix a gauze and wool dressing firmly in place with a bandage. This dressing will require changing only once in three or four days until the incision is soundly healed, and it will be found that the sides of the abscess cavity unite promptly and that there is no outpouring of pus from it. From the time when the packing is removed it is practically a simple incised wound that is being treated. Histories of six illustrative cases are given. (British Medical, May 16, 1908.)

ALCOHOLIC INJECTIONS FOR FACIAL NEURALGIA.

Dr. Sicard, in the Presse Médicale, May 9th, speaks favorably of deep injections of alcohol for all forms of facial neuralgia. The points for injection and the anæsthetic areas are in the infra-orbital mental and supraorbital foramina. Previous surgical intervention rather detracts from the success of the alcohol injections. In other cases they gave perfect results, except in one case in which the needle could not be introduced into the foramen ovale, probably from some anatomic anomaly. Among

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the by-effects he has seen slight myosis, disappearing in about a month, but he noticed that the neuralgia alone induced myosis in 9 out of 44 cases before any injection of alcohol. The patients sometimes complained of a pricking or tickling in the tributary region, but this also vanished in less than a month. If the alcohol is not properly injected in the infraorbital foramen there is liable to be a tendency to paralysis of the nostril and upper lip, lasting for a month or two. He regards this "local alcoholization" as the chosen treatment now for all cases of facial neuralgia not of syphilitic, diabetic or malarial origin. It seems to be the only effectual remedy for tic douloureux. He adds that although this method, by its simplicity, its direct application without necessity for general anæsthesia, the absence of any disfigurement, and the constancy of its successes, is demanded in trifacial neuralgia, it must not be regarded as a panacea for all neuralgias and especially for neuralgias of mixed nerves, as he has previously taught in an article in the Revue Neurologique, June, 1907, entitled "Dangers of Injections of Alcohol in the Sciatica Nerve." (Journal of the American Medical Association, June 13, 1908.)

ANTIDYSENTERIC VACCINES BY MOUTH.

Dr. M. Dopter, at the Biological Society held in Paris, May 16, 1908, reported some experiments on the vaccination of fully-grown mice by feeding them with bacilli of dysentery of the Shiga type, both living and dead. For this purpose he weighed out 0.005 milligram of these bacilli, obtained by scraping an agar culture in a Roux's chamber, and having killed them by submitting them to a temperature of 60° C. for an hour he dried them in a vacuum. He made an emulsion of the bacilli in milk and fed the mice with them for three days running and this process was found to confer immunity. The subcutaneous inoculation of one or even two ordinarily fatal doses of living bacilli in the animals thus treated from twelve to fifteen days afterward did not kill them, while control animals died in three or four days. His experiments showed that one single ingestion of this dose is insufficient to bring about immunization, and that it is only conferred with weaker doses when they are repeated daily for a week. The immunity is not complete until about the end of twelve days and it usually lasts for a month. From the first to the twelfth days, while the state of immunization is in process of development, a "negative phase" is induced, and the animal is more sensitive than the control mice to an ordinary fatal dose. Similar results were obtained with living bacilli; with these the optimum dose corresponds to the amount of emulsion obtained by scraping the culture from one agar tube after twenty-four hours' growth, and this dose should be repeated in a few days. (The Lancet, June 6, 1908.)

BILE, TEST FOR.

Dr. W. H. Bulig, of Chicago, points out the possible source of error in the usual Gmelin test for bile. It has been the custom in some places to instruct the student to heat concentrated nitric acid with a few pieces of the wood of matches, and to heat until the fumes of the nitrogen oxids arise faintly, in this way furnishing the mixtures of nitric and nitrous acids. The acid is then poured into another clean, dry test tube and after superimposing the urine on the slightly yellow nitrous acid, the usual play of colors is looked

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for. An error of interpretation, not of the presence of bile, but of the presence of albumin, is remotely possible after this manipulation. In practically every test made in this way a distinct white ring can be seen between the urine and the acid in non-albuminous urines, sometimes so marked as to suggest the Heller test and a faulty conclusion as to the albumin content of the urine be deduced. The ring is probably caused by precipitated resin from the wood by the nitric acid. The same care in diagnosis as to the presence of albumin, must be taken in this test as in the interpretation of the presence of albumin in urines containing resins from copaiba, etc., when using the Heller's test. In the latter instance the ring is usually high, being precipitated from the urine. In the Gmelin test it is usually low, coming from the nitric acid. Buhlig considers this point one of some practical importance, and he has found no mention of it in any of the text-books on clinical diagnosis. (Journal of the American Medical Association, May 23, 1908.)

CAFFEINE.

Dr. J. M. French in writing on the principal alkaloids says caffeine penetrates the organism rapidly, its effects are evanescent, and its elimination is rapid, chiefly by means of the bile and the urine.

The more the kidneys are diseased, the slower is the elimination of caffeine. Zenetz found caffeine in the urine fifteen days after its administration had ceased.

Caffeine acts upon the secreting cells of the kidneys, stimulating them and causing diuresis. Both the liquid and the solid constituents of the urine are increased by it, thus proving it to be one of our most efficient diuretics.

Cushny tells us that caffeine is excreted in the urine to a very small extent as such. During its passage through the body it loses its methyl groups, and first becomes dimethyl, and then monomethylxanthine. Eventually xanthine is formed, and this breaks up probably into urea. In the urine are found small quantities of the unchanged drug, accompanied by larger quantities of dimethylxanthine, heteroxanthine, and xanthine. The most important property of caffeine from a therapeutic point of view is its power of increasing the secretion of urine.

Caffeine is excreted as such only in small amounts and very slowly by the kidneys. It is largely broken up in the system, and probably passes off as urea. It is also eliminated to some extent by the bile. (American Journal of Clinical Medicine, June, 1908.)

CALCIUM CHLORIDE IN MELÆNA NEONATORUM.

Dr. S. C. Legge treated a case of melæna with calcium chloride in a newly-born babe which had bright blood issuing from its anus and its clothes stained with blood and a dark fluid. The child was pale and weak, previously having been the ruddy hue usual to infancy. There was no vomiting or jaundice. He paid two further visits during the day, and found the discharge still continuing, but of a brighter color. On his second visit he took with him a solution of calcium chloride, a teaspoonful of which was given every half-hour (the child during the following thirty-six hours taking twenty grains). On the following morning the discharge was less in amount, and the child appeared better. On the third day the discharge stopped, and the child made a rapid recovery. The child took the breast well throughout. The midwife informed him that the labor was normal in all respects.

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There was no sign of sepsis in mother or child, and the latter appeared healthy in other respects. The cord was quite healthy, coming off on the fifth day. The author thinks that the calcium chloride had a beneficial effect in this case, as when first seen the prognosis seemed anything but good. (British Medical, May 16, 1908.)

CHLOROFORM VERSUS ETHER.

Dr. Abbe's observations at the Columbia Hospital for Women cause him to consider ether much safer than chloroform, and that chloroform has no advantage in agreeableness if ether is given by the open method or preceded by nitrous oxid or ethyl chloride. Yet in certain cases some one factor will overrule the general objections to the toxæmia caused by chloroform and give it the preference. For example, in acute inflammation of the respiratory mucous membrane, ether irritation, unless modified by morphine or atropine, is entirely contraindicated; also in chronic inflammatory processes that are likely to be lighted up by ether. Operations on the air passages and mouth call for chloroform and diseased conditions of the blood-vessels, atheroma, especially cerebral, aneurism, and plethoric and alcoholic subjects. In obstetrics it is permissible, but it must not be forgotten that even small quantities of chloroform may produce kidney lesion. Ether should be chosen if deep anæsthesia is required. (American Journal of Obstetrics, April, 1908.)

COCAINE.

Dr. J. M. French in writing about this important alkaloid claims that some cocaine is excreted by the kidneys in the dog when it is absorbed into the blood, but 95 per cent. of it is destroyed in the tissues; and this is the fate of all of it in the rabbit, in which this oxidation proceeds very rapidly. It is unknown whether it is oxidized in man, who is more susceptible to its action than these animals. (Cushny.)

When administered by the stomach cocaine can manifest its effects in twenty minutes; by the subcutaneous method in ten minutes. It appears first in the urine. It is eliminated by the mucous membrane also. (Liebreich.)

It is absorbed with remarkable rapidity from all mucous membranes, but it cannot penetrate the unbroken skin. Hypodermically its effects are almost instantaneous. A girl of twelve met death in forty seconds from a hypodermic injection of twelve drops of a 4-per cent. solution. A small amount escapes by way of the kidneys. (Zemp.)

Myrtle reports that he dropped three minims of a 3-per cent. solution into each eye, when at once the patient experienced a sense of numbness in the back of the tongue and throat, with palpitation and threatened syncope, and also nausea.

Whistler, after the application of a 4-per cent. solution to the nasal cavity, noted vertigo and threatened syncope.

Baler mentions a case in which the injection of one grain into the gums by a dentist produced death in a few minutes.

It is evident from these statements that cocaine is absorbed with great rapidity, acts promptly, and passes off through the kidneys without any great delay, hence requires to be given in small, frequent doses in order to keep up the effect. (American Journal of Clinical Medicine, June, 1908.)

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HYDROGEN PEROXIDE IN PUERPERAL SEPSIS.

Dr. V. T. Carruthers reports a case of puerperal sepsis treatment with hydrogen peroxide. He was called on the fourteenth day to see a puerperal woman who had been attended by a midwife. The pulse was 140, the temperature 104°; there was great pelvic pain and tenderness, and pus was seen oozing copiously through the os uteri. He curetted at once, then swabbed the uterine cavity thoroughly with pure lysol, and inserted a large double wick of sal alembroth gauze soaked in 1 per cent. lysol (removed next day). In a few hours there was considerable improvement. The pulse fell to 98, the temperature to 103°, and pain and tenderness almost disappeared. In two days, however, she became as bad as when first seen—or indeed worse. He again swabbed out the uterus, this time using hydrogen peroxide solution (10 vols.) and draining with sterile iodoform gauze soaked in the solution. The effect was most striking. In three hours the temperature fell from 104.2° to 100°, the pain vanished, and she looked like a different woman. When the gauze had been in the uterus for twenty-four hours she had a sudden rise of temperature to 104°, and pulse to 120; but this was apparently due to the gauze ceasing to act as a drain and becoming a plug, for on its removal the temperature fell to 98° and the pulse to 80, and recovery proceeded smoothly. It should perhaps be mentioned that before each uterine manipulation an attempt was made to discourage the vaginal germs by means of mercurial douches given with sterile apparatus. The point that seemed noteworthy in this case was the marked superiority of the hydrogen peroxide over the pure lysol, both being used under practically identical conditions in the same patient. (British Medical, June 6, 1908.)

INDICAN REACTION.

Dr. Houghton's observations have led him to believe as follows: Urinary indican is a product of intestinal putrefaction. There may be putrefaction without the production of indol, but there cannot be indicanuria without putrefaction. A maximum excretion of indican, that is, an amount which on Folin's scale gives an index of 100 or over, may be safely relied on to indicate excessive intestinal putrefaction, and especially the intoxication arising therefrom. A maximum reaction which gives an index under 100 may be significant, but its interpretation should be strictly guarded by the general condition of the patient, that is, by the oxidizing and excretory capacity. A heavy indican reaction which markedly subsides under treatment undoubtedly indicates a lessening intoxication, but minor variations in the color index have no significance at present. No interpretation can be placed on a negative reaction, too many unsolved factors entering into the problem. (American Journal of Medical Science, April, 1908.)

NITROUS OXIDE AND OXYGEN ALONE AND IN COMBINATION WITH ETHER.

Dr. Buckler gives an account and illustrates his inhaler which is constructed somewhat like the Hewitt inhaler with certain simplifications. The following advantages are claimed for using nitrous oxide and oxygen alone and in combination with ether, according to the method described: First, a more even anæsthesia, with a minimum risk to the patient as we know approximately the strength of the vapor inhaled at each inspiration. Second, the ether vapor, being warmed,

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little or no mucus forms in the mouth or throat, and the patient does not swallow or inspire a lot of ether-saturated saliva or mucus; consequently the amount of post-operative vomiting is decreased to a minimum and the risk of post-operative pneumonia is reduced. Third, the warmed ether vapor is taken up by the blood almost immediately, and therefore the effect of the anæsthetic is more rapid. When cold ether vapor is taken into the lungs, as in administration by the drop method, a large amount remains in the reserve air of the lungs, to be warmed over before it is capable of being absorbed in the blood, and such an amount of unabsorbed ether vapor being suddenly taken up by the circulation is a menace to the life of the patient. Fourth, the saving of ether is tremendous when giving by this vapor method, as he finds that he needs only from one-quarter to one-half the amount used in the drop method. The greatest advantage of all is the marked lessening of all unpleasant after-effects of ether when this form of administration is used. (Maryland Medical Journal, April, 1908.)

OXYGEN: HYPODERMIC INJECTIONS IN SCIATICA.

Dr. Sicuriani employed hypodermic injections of oxygen in sciatica and has obtained good success.

He treated 13 cases of sciatica, two of multiple chronic arthralgia—neuralgia of the right crural and the neurasthenic rachialgia. The 11 cases of simple primary sciatica, of varying duration (one to twelve months) and all completely disabled, were cured in periods varying from fifteen days to one month and after six to ten applications. About 300 cubic centimeters of oxygen were injected at a time and on alternate days. There was no doubt as to the evident analgesic effect of the treatment. In compression or symptomatic sciatica it does little or no good, so that a purely mechanical explanation of its therapeutic properties will not suffice. More probably it acts by its biochemical effects on tissue change. The necessary apparatus is simple, easy of appreciation, and not costly—in all these respects contrasting favorably with x-ray treatment. (Gazette degli Osped., March 29, 1908.)

PILOCARPIN AND THE LYMPHOCYTE OUTPUT.

Dr. Rous, in his experiments on dogs, finds that intravenous injections of pilocarpin nitrate produces a rapid increase of lymphocytis through the thoracic duct, and it is believed that the lymphocytosis of the blood is the result of this increased output. While the real cause of the quickened lymph flow is not clear, it is believed that it may result from contraction of smooth muscles. The rôle claimed for mechanical factors in the production of rapidly appearing lymphocytosis receives support from these observations. (Journal of Experimental Medicine, May, 1908.)

PROBILIN.

Dr. Charles S. Rockhill, Cincinnati, writes on the "Medical Treatment of Cholelithiasis": "It has been shown that a large portion of salicylic acid, given by mouth, passes into the bile, inhibits putrefactive processes and disinfects that secretion. Salicylic acid also has a powerful cholagogue action, producing a thin bile deficient in solids. It therefore seems to be ideal in its action, for it attacks the two most important etiological factors of gall-stones—infection and stagnation. Bauermeister has proposed a combination of salicylic acid,

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sodium oleate, menthol and phenolphthalein, the probilin pills."

Dr. Rockhill has had experience therewith, and details the following case:—

"Mrs. P., aged 41, married. Had four children and was pregnant at the time I was called, June 21. I found her in great pain, temperature subnormal, with cold perspiration, some icterus, nausea and vomiting. Has had similar attacks.

"I gave her a hypodermic injection of morphine, applied Priesnitz compresses, and washed out the stomach with hot Carlsbad water. The symptoms subsided, and I discharged the patient with the usual instructions as to taking Carlsbad salts, exercise, etc. About two weeks later I was again called and found the same train of symptoms. In the meantime I had been advised to use probilin and concluded to try it in this case. After properly cleansing the bowels, I started with 3 pills morning and evening, increasing each dose one pill every second day until 14 pills were taken daily for a period of three weeks. Then I gradually diminished the number, the treatment lasting 3 months. The patient had one attack, not as severe, shortly after she started the medication. Since then she has been well and free from all symptoms."

Dr. Rockhill has had 3 other cases that yielded in a similar manner, under the same treatment, and one patient who would not follow instructions, was operated upon and succumbed probably to a peritonitis. (Woman's Medical Journal, March, 1908.)

PSYCHIC TREATMENT OF ALCOHOL AND DRUG NEUROSIS.

Dr. T. D. Crothers, Hartford, Conn., writes ably on this subject, and considers both the physical and psychic elements in the pathologic state of the inebriate or drug habitue. The neurotic heredity and the inflammatory and toxic symptoms must receive first and constant attention, but the psychic disturbance may be even more prominent, and to treat both, giving special attention to the one that is the most important in the individual case, is the highest practical science of to-day. When psychic treatment is employed, one question is whether sudden or gradual methods are best. If the patient is egotistical, with delusions as to his strength and capacity, it is well to use the most impressive means to shock and break up his actual range of thought. This should be followed by more continuous impressions till the mind has been trained out of its old morbid tendencies. In other cases it may be more advisable to use gradual methods from the first and the use of judiciously regulated mental and physical occupation, even up to the point of causing fatigue. Religious impressions, properly utilized, are also helpful, though Crothers thinks their effects are apt to be transient if not followed up by continuous appeals and increased organic vigor. Inebriates and drug fiends are very susceptible to contagion, and the paretic egotist who defends the use of liquor and urges other dangerous theories which are accepted by weaker minds, is a dangerous psychic degenerate, and should be isolated and made subject to strong impressions. Physical training, removal of toxic causes and improvement of nutrition afford a larger scope for mental treatment, and the toxic neurotic with his damaged pain centers, weakened resisting power and lowered vitality needs something more than mere physical treatment. He needs also psychic remedies to turn his feeble mentality into new lines of thought. (Journal

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of the American Medical Association, May 23, 1908.)

PSYCHOTHERAPY.

Dr. B. Onuf, of New York, in his paper discusses this subject very fully. He first remarks on the former lack of due appreciation by physicians of the interdependence of the body and mind, and on the reaction against this tendency that has occurred of late years, largely furthered by the studies of hypnotism and its therapeutic application. The partial failure of hypnotism, however, led to closer investigations of the psychic processes, especially in hysteria, by various authors, of whom he particularly mentions Janet and Breuer and Freud. The two latter were thus led to a new method of treatment, based on the hypnotizability of the patient, and named by them the "cathartic method." The idea of this method is removal of the morbid symptoms by making the hypnotized patient return to the psychic state in which the symptoms first appeared. The good effects are not ascribed to a suggestive prohibition of the physician, but to starting the psychic processes over again in a more healthy direction. While hypnotism has proved its value, there are still objections to its therapeutic use, and many physicians have attempted to substitute for it waking suggestion. Dubois, however, calls attention to the disadvantage of suggestion even in the waking state, insisting that suggestibility is itself a fault, and that the individual who wishes to preserve his mental health must appeal to his intelligence and guard his mentality. He therefore discards suggestion and replaces it by a rational, moral, and psychic treatment based on a study of the functions of the nervous system in general and its relation to mind in particular. Onuf gives illustrations of the value of this method in the cure of such conditions as constipation and insomnia. The importance of studying the factor of fatigue, especially in neurasthenics, is here emphasized. Attention is also called to certain symptom-complexes, some of which have been designated by Prince "association neuroses," and in which the knowledge of the connection of certain physiologic processes with the mind is of especial importance and serves as a guide to the treatment. Several instances are given—in one of these a patient subject to attacks of coryza, excited by even the mere presence of a rose, was cured by the production of all the symptoms with a perfect artificial imitation of a rose and afterward explaining the facts. (Journal of the American Medical Association, June 6, 1908.)

QUININE PROPHYLAXIS OF MALARIA.

Dr. E. R. Stitt, Surgeon United States Army, believes and quotes Dr. Ronald Ross that it is not a good policy to substitute a measure which does not exclude infection, but is merely extirpative in some cases, for positive prevention, Celli's statistics also show how much more effective mosquito protection, with or without quinine, is than quinine prophylaxis alone. In 1895 Stitt served as medical officer of the Ludlow Nicaraguan Canal Commission. It was his intention to recommend quinine as a prophylactic, but advised by a physician who had had experience in the employ of the canal company, he decided against it. This physician told him that he had found that quinine in doses that could be well borne had little effect on the development of the disease; also, that it seemed that its previous prophylactic use made the individual less amenable to

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its curative effects and more subject to relapses. A few cases of malaria occurred while in camp, all yielding satisfactorily to large doses of quinine. The only member of the party who insisted on taking quinine as a preventive was the only one who had an attack on the trip home. A still more striking experience was with a battalion of marines who were stationed in an exposed situation near Panama for a month in 1906. During that time each man took nine grains of quinine daily as a prophylactic. Very little malaria occurred while on the isthmus, but the first day after sailing from Colon, there were 20 cases, the next day 53, and the third day 45. Notwithstanding the general administration of almost curative doses of quinine as a prophylactic, the condition of the battalion on its arrival at Porto Rico was such that it was deemed necessary to get the men out of the tropics, and they sailed at once for Boston. During the five days' trip to Boston there were 215 acute malarial paroxysms among 298 men, in spite of the prophylactic use of quinine for those who were not cinchonized. The attacks were atypical—there was no frank chill. When the men arrived at Boston many were so weak and anæmic that they were unfit to return to the tropics. The fact was noted that they did not seem to respond at all satisfactorily to quinine, even when it was given hypodermatically. Although from blood-examinations made before the cases became so numerous the form of malaria was considered to be chiefly tertian, the clinical features indicated an estivo-autumnal infection in many of the cases. From such facts as these, Stitt says he cannot but believe that malarial parasites may develop a resistance to quinine, similar to that observed by Browning in trypanosomes, which moreover, seems to be inheritable by these organisms. He has himself seen actively motile amebæ in the stools of persons undergoing quinine irrigation of the colon, and asks, if, instead of attributing this to the protection of the mucus, can we not suppose that these amebæ have developed a resistance during the extended use of the drug? Another important consideration is that not only is the chief means of correct diagnosis, the finding of the parasite in the blood, made uncertain or useless by the driving of the parasites from the peripheral circulation, but the frank manifestations of the malarial paroxysms are masked so that clinical diagnosis is also made difficult, especially in the estivoautumnal forms of the disease. The physician referred to previously considered this a cause sometimes of delay of proper curative treatment resulting in difficult cases and more frequent relapses. At that time (1895) the fact of parthenogenesis in the microgametes was unknown. Now, thanks to Schaudinn, we have a scientific explanation. "The sexual forms in estivo-autumnal fever do not develop for about ten days after the first paroxysm. In case we are giving quinine prophylactically we do not recognize the first attack and as time goes by the gametes develop. These being resistant to quinine, as shown by the experiments of Gualdi and Marirano, are not extirpated. Later on the microgametocytes die out, leaving only the macrogametes. These by a parthenogenetic reproduction give rise to another non-sexual cycle and we have a relapse." (Journal of the American Medical Association, May 23, 1908.)

SERUM TREATMENT OF OSTEOMALACIA.

Dr. Hoffmann reports a case of osteomalacia with wonderful success obtained

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by the use of serum. He refers to the many analogies between osteomalacia and exophthalmic goiter. In the former the ovary, in the latter the thyroid, is functioning to excess. In the former ovariotomy, in the latter strumectomy, has a curative action. Both are pre-eminently affections of the female sex, and their effect on the phosphorus metabolism seems to be identical. The secretory activity of the ovary seems to rise and fall with that of the thyroid. The thyroid seems to be predominant, probably on account of its influence on the blood-pressure. He knows of no case of osteomalacia with exophthalmic goiter developing later, but many cases are on record in which osteomalacia or a tendency thereto developed in the course of exophthalmic goiter. For these and other reasons he thinks that the serum of thyroidectomized sheep is theoretically indicated in osteomalacia, and he reports a case in which it was given with striking success. His patient was a x-para of 45 with osteomalacia of about six years' standing, able to walk only a few steps with two canes. In less than two months under the serum treatment she was restored to comparative health. (Zentralblatt für Gynakologie, May 2, 1908.)

TUBERCULIN IN RENAL TUBERCULOSIS.

Dr. A. Pielicke employs tuberculin in renal tuberculosis as frequently as his practice will permit, and reports the results obtained (Berl. klin. Woch., January 20, 1908). In his own case, in 1893, he was seized with a severe attack of pulmonary phthisis. The cough was severe and the night sweats, fever and sputum, containing numerous tubercle bacilli, pointed to a bad attack. He was first sent into the country and fed up on milk, but no improvement in the pulmonary catarrh could be noticed. He was then sent to Sprengler in Davos, who, as is known, is an old pupil of Koch. During the five months at Davos he was treated with tuberculin, with the result that the fever ceased, the bacilli disappeared from the sputum, and he felt well again. Since then, that is during the fourteen years, he has lived in Berlin, but has never had any symptoms pointing to any pulmonary mischief. Turning to the kidney patients, he says that one used to regard tuberculosis of the kidney as a necessarily progressive hopeless condition. The prognosis which one used to give extended to not more than three years, but in recent times one has been inclined to extend this to five years. He has, however, had a patient in whom a double renal tuberculosis has remained in the same condition for seven years. In another case, a young man of 20 years, was treated for gonorrhœa, and when the infection had cleared up a clouding of the urine was noted which could not be influneced. Uric acid crystals were found from time to time, and on occasional attack of renal colic, which improved under uricidin treatment gave rise to diagnosis of renal calculi. Six months later he consulted another medical man, who diagnosed renal tuberculosis, and on re-examining the patient this diagnosis was confirmed. On August 9, 1907, he commenced a tuberculin course and increased the dose from $\frac{1}{20}$ milligram to 2 milligrams of old tuberculin. In this case the renal tuberculosis had been present for some seven years without affecting the patient's general health much, and although the author says that he is not proud of the case, the mistake in diagnosis is probably responsible for his seven years' comfort. The possibility of a chronic course in renal tuberculosis, he thinks, is thus proved, and he is in-

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clined to ascribe much importance to this in cases of double disease, where one can remove the more advanced disease, and leave the less affected organ for the body to deal with. The increased circulation through the one organ can have a curative effect. He now describes a case of tuberculosis of the right kidney in a woman aged 40 years, whose left kidney could not be proved to be intact. She was treated with tuberculin, and improved generally and locally during the four months occupied with the treatment. The intention to extirpate the right kidney was given up when he found that she was steadfastly improving, and two years later she was found to be in excellent condition, with perfectly clear urine and no visible signs of disease to be detected by the cystoscope. A prolonged search for tubercle bacilli revealed four single bacilli. She will be again treated with tuberculin to ensure a complete cure. He has proved that tuberculosis of the bladder is also a good field for tuberculin treatment, and advises this for both bladder and renal affection. (British Medical, June 6, 1908.)

TUBERCULIN REACTION, OCULAR.

C. P. Clark, Chicago, gives the results of tests of the ocular tuberculin reaction in 109 adults and 80 children. It was positive in 44, or about 65 per cent. of 68 tuberculous or probably tuberculous adults, the incipient and moderately advanced cases giving a higher percentage of positive reactions than the more advanced cases. In 41 non-tuberculous patients the test was negative, save in seven out of fourteen cases of typhoid fever, and one of two suffering from emphysema and bronchitis. Clark concludes from these results that the test is of value in the diagnosis of tuberculosis. It is more reliable in the early than in the advanced stages, but is not specific and is not of service in the differential diagnosis between typhoid and tuberculosis simulating typhoid. In no case should a positive conclusion be based on the result of this test alone. The reaction was also tested in 80 children, the ages ranging from six months to fourteen years. Positive reaction was obtained in twelve out of 57 suspicious cases, the percentage increasing with the evidences of tuberculosis. In 23 normal children, there was no positive reaction. Clark has also studied the literature in regard to the very severe reactions occasionally observed, on account of which some have advised the abandonment of the test. His conclusions are: "That if an 0.5 or 1 per cent. solution is employed, preferably of original old tuberculin in individuals free from previously diseased eyes, there will be little danger. Hypersusceptibility, if natural, cannot be foretold; acquired hypersusceptibility by repeated instillation into the eye, or subsequent subcutaneous injection of tuberculin, should be avoided where possible, for it has been the experience of many that reactions under such circumstances are very frequently severe. Cohn, Levy, Rosenau and Anderson (Journal of the American Medical Association, March 21, 1908, p. 961), give indisputable evidence that a positive reaction following repeated instillation into the same eye is not of diagnostic worth, but is simply an evidence of acquired hypersusceptibility, an additional reason why second instillation should be abandoned." (Journal of the American Medical Association, June 20, 1908.)

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Book Reviews

GENERAL SURGERY OF THE PRACTICAL MEDICINE SERIES. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume II. Edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in Rush Medical College (in affiliation with the University of Chicago). Series 1908. Chicago: The Year Book Publishers, 40 Dearborn Street.

The subject matter of this book presents a very good explanation of the most recent views of the twentieth century surgeons, concerning surgical literature of the past year. This work is particularly strong in the portions dealing with anæsthesia, wound healing, nerve anastamosis, treatment of gastric ulcer, diseases of the thyroid, abdominal surgery, diseases of the peritoneum and mesentery, intestinal surgery and hernia.

In the chapter on anæsthesia, the author discusses the duties of the anæsthetist, the examination of the patient, new inhalers, accidents and complications and the treatment of the patient after the operation is over. He discusses the various mixtures and the special conditions in which the anæsthetics are indicated. He advocates strongly the practice of gastric lavage immediately upon ceasing to administer ether. A very good explanation of Bier's most improved methods of treating infections, especially of the knee and shoulder joints, by inducing hyperemia, are given. The results of operations concerning nerve anastamosis when its technic is exact is excellent and the many new lesions yielding to surgical intervention are very well described. On page 107, in the study of tumors, we find a very instructive cut which shows, first, how the epidermis is displaced, then how it has grown and curled up and finally, the complete formation of an epithelial cyst. However, the chapter devoted to tumor gives a description of the various methods of treating tumors such as: "Trypsin Treatment of Carcinoma" and the "Treatment of Sarcoma by Mixed Toxins." More success has been achieved through the treatment by mixed toxins.

Every topic is arranged systematically and gives very valuable information. All conditions are illustrated by a considerable number of cuts and clinical cases with a criticism of each and a summary of the results obtained. The author has presented the most recent knowledge of surgical intervention than is found in any book. The descriptions and the statistics with reference thereto have been based chiefly on the most severe forms of the disease of which a large number have come under the author's personal observation. The conclusions at which the author has arrived are from the most important works and experience. The work taken as a whole, is excellent and compact.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

SOME COMMONLY OVERLOOKED CAUSES FOR STOMACH AND BOWEL DISTURBANCE.[1]

BY ROBERT T. MORRIS, M.D.
Professor of Surgery in the New York Post-Graduate Medical School and Hospital, etc.

IF I were to give two points in advice to a class of medical students just about to begin lifework, I would say: First, keep out of debt; next, remember that cases of stomach and bowel trouble are not cases of stomach and bowel trouble. Most of the dyspepsias are nothing more than symptoms, like a cough or a sneeze. Why do the bowels cough and sneeze? Often because there is a little bit of pepper at the end of the cæcum, known as the "appendix vermiformis," which happens to be undergoing infective or degenerative changes. This is one of the most commonly overlooked causes for stomach and bowel disturbance. Not at the time of an acute infective invasion with explosive features, when we have to dodge to get out of the way when the patient vomits, for we all recognize the character of the stomach and bowel disturbance right then; but if instead of an appendix undergoing infective invasion we have an appendix undergoing fibroid degeneration, we are apt to be looking the other way while the bowel coughs and sneezes mildly and chronically in what is known as intestinal dyspepsia. Instead of speaking of the appendix as a bit of pepper, let us elaborate a little more and have two kinds of bowel exciters at this point: The appendix which is the seat of acute infective invasion is a sparker, and keeps things going at a lively clip; the appendix undergoing fibroid degeneration, on the other hand, is a G. D. cap of the sort that we used to put on the old musket in the days when we

[1] Read before the American Therapeutic Society, May 8, 1908, Philadelphia.

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loaded it up with slugs and watched behind the stone wall for a woodchuck. Sometimes the cap went, and sometimes it didn't; sometimes it just sizzled and fizzed. If we liken the appendix undergoing fibroid degeneration to a G. D. cap, we shall find that patients often refer to it the same way. We have, in this type of appendix, an irritative lesion rather than an infective lesion. It takes more patients to the doctors' office than any other kind of appendix trouble, but the doctors, in general, do not know it—this year. One doctor tells the patient that he has intestinal indigestion, and when the patient tires of this doctor he goes to another one who tells him the same thing, and that is about all the benefit the patient gets out of it. Why does the appendix undergoing fibroid degeneration cause so much disturbance and such persistent disturbance? It is because the coats of the appendix replaced by connective tissue, retain their nerve filaments, and these nerve filaments are irritated by contracting connective tissue in the appendix, just as they are in the scar of an amputated leg. The irritated nerve filaments excite the intimate ganglia of the bowel wall (Auerbach's plexus and Meissner's plexus), and the function of the bowel is deranged. Sensory nerves as well as sympathetic nerves are excited, and these patients have a feeling of discomfort in the appendix region, which now and then amounts to actual pain, but it does not send the patient to bed. The patient is inclined to press over the appendix region with his hand; he suffers from chronic indigestion, and is in a state of more or less general unrest. It is my belief that this type of appendix, so common in middle life period, is a safeguard against real appendicitis, as we understand the term, and for two reasons: First, because the structures which are engaged in infective processes—mucosa, submucosa, and lymphoid—are being removed by connective tissue replacement; and, in the second place, because the irritation of entrapped nerve filament calls out a constant local hyperleucocytosis which is protective. This type of appendix is very different from the scarred appendix resulting from an acute infective invasion, because in the latter type nerves are destroyed along with other tissues, and we seldom have persistent stomach and bowel disturbance caused by the scarred appendices, unless peritoneal adhesions in the vicinity cause annoyance. So little is fibroid degeneration of the appendix known this spring, that many of these appendices have been operated upon by surgeons on the supposition that they were dealing with a chronic infection of the appendix, and surgeons operating in such cases have sometimes been so disappointed at finding nothing but a little degenerate appendix left, that they have closed the abdomen without removing it, and the patient has continued to suffer; whereas, if the surgeon had removed the little G. D. cap, his patient would have gained forty pounds in weight and would have had a feeling of deep gratitude for our whole profession.

These specimens which I pass about represent various stages of fibroid degeneration of the appendix, from specimens still retaining many of the normal structures, to specimens consisting of little more than fibrous strings, and yet each one of these specimens is the *memorabile* of a cured patient. On account of my interest in the subject some of my assistants and friends got to calling

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this type of appendix by my name, but I object to this nomenclature for two reasons: First, because Senn and Ribbert both described the condition before I took up the study. Senn called the condition "appendicitis obliterans," and Ribbert referred to it as "a normal involution process." Senn's nomenclature does not seem quite appropriate, because it is not an "itis" that causes "obliterans," but an "obliterans" that causes the "itis." Ribbert's description is not comprehensive, because we do not associate involution with an inflammatory condition. Another reason why I do not wish to have these called Morris appendices, is because the nomenclature went wrong and got to stand for the normal appendix among many who quoted the name in a spirit of fun, and by *reductio ad absurdum* the logical deduction was that I believed in removing normal appendices. I have never at any time, in speaking or in writing, advocated the removal of normal appendices, and my reason is a very definite one. My reason is that in removing a normal appendix we open a tiny spigot of infection in a field that is not guarded by protective leucocytosis at the moment. If we remove an appendix which has been the seat of an infective process for a few hours, it makes little difference whether we wash our hands before or after operation, for the patient is protected; but when we remove a normal appendix in an unprotected field, look out for the little spigot!

Another commonly overlooked cause for stomach and bowel disturbance is eyestrain. Many ophthalmologists are familiar with the fact, but few are willing to give their time to a painstaking study of this particular part of their subject. They are too anxious to get to the next patient. San José scale is the worst pest in the apple orchard, and the "next patient" is the worst pest in the office of the ophthalmologist. It requires a great deal of special study on the part of the physician and surgeon to know which eye men should see into in their dyspepsia cases. Some ophthalmologists, without a proper sense of proportion, have made so much of the subject that their views are held to be fanciful, and others have given so little attention to the subject that they are not qualified to express an opinion. Almost anyone of us can get from the patient a history of headaches or of frowns which will lead him to send his patient to the ophthalmologist with the request for either negative or positive testimony bearing upon the matter of dyspepsia.

Bile-tract adhesions cause an immense amount of stomach and bowel disturbance, and yet this cause is commonly overlooked. Most of us have adhesions in the region of the gall-bladder and bile-ducts. These adhesions are commonly of no importance, and in other cases they are of dominating importance. Bacteria and their toxins taken from the bowel to the liver by the afferent vessels of the portal system, are in part excreted by the liver, and on the way out they set up inflammatory processes in the mucosa of the gall-bladder and bile-ducts which lead to desquamation of endothelium on the peritoneal side, with exudation of plastic lymph. This lymph later forms adhesions which frequently engage the pylorus, the hepatic flexure in the colon, and other structures in the vicinity. This inflammation of the bile-

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tract region is often subacute, and passes by as many names as we formerly gave to appendicitis before we understood that condition.

Loose kidney is another commonly overlooked cause for stomach and bowel disturbance, and as with bile-tract adhesions there are loose kidneys which cause little or no disturbance, and there are other loose kidneys which act as a loose bolt in the patient's works. The discriminating diagnostician takes pains to classify the different kinds of loose kidney, and to apply tests which show the rôle played by loose kidney in any given case.

Ulcer of the stomach, obstruction of the circulation by nephritis, improper use of alcohol, ice water, and tea, are not included in my subject, because these causes for dyspepsia are not commonly overlooked. Diagnosticians are keen enough in making the diagnosis in this old field of observation, but according to my experience the recognized causes for dyspepsias are distinctly less in number than the overlooked causes. How are we to make a differential diagnosis between the different overlooked causes that I have brought forward to-day? In the first place, we will call up a central telephone station consisting of a pair of points situated approximately an inch and a half from the navel on either side of the navel. Many young business men complain that it is difficult to find a profitable occupation, and yet they are unwilling even to take the pains to select at the outset the kinds of occupation in which it is possible for them to become millionaires; but almost anyone can become a millionaire if he cares to take the trouble. In the same way almost anyone can make a diagnosis of the cause for almost any dyspepsia if he cares to take the trouble. Now, for a starting point, let us go to our pair of points which represent the lumbar ganglia, and which give testimony as soon as we ask for it, by making deep pressure with the fingers, to determine whether the right group or the left group is hyperæsthetic, singly or together, or not at all. If we start out with examination of the pair of points, we shall find that this examination of the P. P. is of equal importance with urinary examination in older fields of work. Remember, that examination of the P. P. is of equal importance with examination of the urine. If the dyspepsia is caused by fibroid degeneration of the appendix, we shall find hyperæsthesia at the point on the right side of the navel, singly and alone. If it is caused by sigmoiditis, we shall find the left group of ganglia hyperæsthetic singly and alone. If it is caused by some pelvic condition, we shall find hyperæsthesia at both right and left points; for instance, if an appendix and an oviduct happen to lie side by side in the pelvis, and we cannot determine by ordinary means which one is the source of irritation, call up the telephone station at the pair of points and find out. If it is the appendix, there will be hyperæsthesia at the right point alone; if it is the oviduct, there will be hyperæsthesia at both points. By making use of this telephone station we can often trace the cause for a dyspepsia to a hernia or to hæmorrhoids, and I recently traced it in an obscure case to a distended left seminal vesicle that turned out to be a primary focus for tuberculosis, which is rare. If there is hyperæsthesia at neither one of the pair of points, look for something above the level of the navel for the cause of the dyspepsia. Take up the question

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of eyestrain or of bile tract adhesions, or some of the commonly recognized causes for dyspepsia.

It is difficult for some of us, who are half a hundred years old, to take up a new line of observation in this way, and many men are so trained to the habit of resisting external impressions that they become convinced very slowly. I belong to this class myself, but I am very grateful to men with whom I disagree, and who oblige me finally to come to their points of view. The neurologists, as a class, are the hardest men to shift from their positions, because their knowledge is so weighty that it has ponderous momentum and velocity along established lines. Did you ever see a stag come to the spring at evening to drink? He steps out gracefully but boldly, elevates his beautiful head, shakes his magnificent antlers, and surveys the forest and glade and looks as though he owned it all. That is the neurologist. Do you know what a little 30.30 bullet behind his right shoulder blade will do? That is the patient with nervous dyspepsia.

GOUT; A DISEASE OF THE METABOLISM: ITS TREATMENT.

By OLIVER T. OSBORNE, M.A., M.D.
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The cause of gout has so long been associated with uric acid and diet that it may not be amiss to review our knowledge of the digestive end-products.

We are only just beginning to understand and appreciate the complexity of the protein molecule. At one time it was believed that the differences in proteins were mostly external, and that one protein could be substituted for another without any particular physiologic effect. We now know that the protein molecule of various foods not only varies in the character of its component parts, but also in the amounts of the latter. Hence we must conclude that we cannot obtain exactly the same nutrition, exactly the same chemical results, or exactly the same end-products and excretion products from feeding meat, eggs, milk, and cereals. There have been listed as many as seventeen component groups in the protein molecule, and some of these may vary widely in amount. The broken down elements of the proteins make various combinations needed by the various parts of the body, and it can be readily understood why any organ engaged in digestion or metabolism which becomes impaired in its function, may prevent the proper formation of a protein molecule needed by some part of the body for its nutrition, or may interfere with the chemical changes involved in the production of a molecule fitted for ready excretion.

Urea is the principal end-product of physiologic protein oxidation, and is present in the blood in amounts varying from .03 to .15 per cent., and about

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30 grams of it are excreted daily in the urine, while after active exercise the perspiration may contain as much as ¾ of a gram. The immediate antecedents of urea are ammonium compounds, which are brought by the blood to the liver and there changed to this nitrogen end-product. However, some urea may be found in the urine after complete removal of the liver, indicating that it can to some extent be produced somewhere else, but how and where is not known.

Uric acid, presumably the specific end-products of nucleo-protein, is excreted by the urine in varying amounts, the average being perhaps .8 of a gram per day. Uric acid is probably not present in the blood as such. The production of uric acid seems to increase with leucocytosis, and certainly is increased by the ingestion of nucleins, as lately shown by Mendel and Brown. They found that the output of uric acid could be made very small, large, or very large, depending upon whether the animal was fed upon foods free from nucleins (purin-free foods), or upon foods rich in nucleins. The richer the nucleo-protein food, the greater the amount of uric acid output.

While urea is the ultimate end-product of protein metabolism, it has been claimed that if there is not enough oxygen in the body, sub-oxidation, as it is termed, occurs, and uric acid is formed in its place. Certain it is that uric acid is derived from purin ingested, or from nuclein breakdown. Also, some of the uric acid thus formed seems to be destroyed in the body, and exactly what the resulting excretory products are from the uric acid thus destroyed has not been definitely determined. It is not unlikely that one of these is represented by oxalic acid, thus suggesting the origin of the familiar sediment of oxalate of lime so frequently observed in the urine of the gouty. Uric acid is formed in all the organs of the body, and in the muscles, and is perhaps destroyed in the liver, muscles, and kidneys.

Allow me to briefly sum up the physiology of the organs concerned in digestion, the perversion of which, or the wrong interaction or correlation of one secretion to another is, I think, the foundation of gout.

Disturbed secretions of the stomach, or imperfect stomach digestion, do not seem to be the cause of gout.

The liver produces bile as an external secretion, and forms glycogen and urea as part of its internal metabolic duties. The bile neutralizes the acid chyme and aids in the absorption of fats, but it is largely an excretory product, as it contains a large amount of waste products. The portal vein carries blood rich in carbohydrates to the liver, where some of them are changed to glycogen, which is retained as such to be given up to the blood, from time to time, as dextrose. If there is a carbohydrate deficiency in the food, the liver cells can convert protein molecules into glycogen, so that there is never an absence of dextrose, even in starvation. Urea is produced to a larger extent in the liver than in any other part of the body, and is taken up by the blood and excreted by the kidneys.

The pancreas has an external digestive secretion comprising three ferments: trypsin, amylopsin, and steapsin, and an internal secretion from the

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islands of Langerhans which seems to be necessary for proper sugar metabolism.

There is a product formed by the mucous membrane of the intestines called secretin, which excites the pancreas to secretory activity.

The suprarenal glands furnish, besides their blood-pressure raising secretion, something that modifies sugar metabolism, and this secretion has a great affinity for oxygen. These glands also take some part in rendering nontoxic the products of nitrogen metamorphosis.

No investigation of the physiologic changes of nitrogen is complete without consideration of the effect thyroid secretion has on these changes. It is well known, in the absence of thyroid secretion, how quickly poisoning of the system takes place. It is also well known how the feeding of thyroid increases nitrogenous elimination. Also the relation to sexual activity must be considered, as the thyroid gland has a great deal to do with sexual functions. It is disturbed by changes in the testicles or ovaries, or in the sexual life of the individual, and certain kinds of such disturbances in the secretion may cause gout. Women are more likely to have gout develop after menstruation has ceased, which probably signifies a marked change in their metabolism at this period. The relationship of sexual functions to gout was recognized by Hippocrates, who devoted three aphorisms (Section 6) to this subject:—

Aph. 28. "Eunuchs never suffer from the gout or become bald."

Aph. 29. "Women are exempt from gout until the cessation of the menses."

Aph. 30. "Gout does not appear in adolescence previous to venery."

In considering the causes of gout we must also consider the excretion of the nitrogen end-products or waste products. There should be proper excretion from the bowels, normal action of the kidneys in excreting compounds and salts, and normal excretion by the skin. In general the perspiration varies inversely with the excretion of urine, but may average approximately in ordinary daily life about 800 grams. Though the sweat is mostly water, it contains inorganic salts, some fatty acids, small amounts of urea, and sodium chloride from 2 to 3½ parts per thousand. If the kidneys are diseased, and after severe muscular exertion, the amount of urea excreted by the skin is greatly increased.

In anything so complex as the detailed chemical reactions, in different persons under different conditions, of the varied food molecules from ingestion to excretion, and where so many secretions and so many organs are concerned in these reactions, it is readily seen how a perfect metabolism may become impaired. It is quite conceivable that if an organ furnished an imperfect secretion to metabolize some part of the protein molecule, or if an organ imperfectly excreted the end-product of a digested and metabolized protein molecule, that some other organ or excretion would take up its work. This interaction is understood when it is remembered that all parts of the system are so wonderfully related through the complex nervous mechanism that each organ notes a disturbance of each other organ, and responds to the impetus to

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do, or to combine to do, work that will counteract or compensate for the defect. If the cause is temporary or not too long continued, the metabolism of the nitrogen molecule from start to finish may still be perfect. However, finally, sooner or later, this metabolism must become imperfect, and as a consequence there arise imperfect molecules of nutrition, imperfect end-products, imperfect excretion of such products, and then the results of such imperfections, and these results, as a whole, are gout.

When this imperfect metabolism causes irritation of an organ or set of organs, the final consequence may be nephritis, cirrhosis of the liver, arteriosclerosis, myocarditis, anæmia, perhaps even cerebral degeneration, or only inflammation of the joints.

Disturbances of digestion or of the digestive organs may be caused reflexly by nervous upsets, and gouty attacks be precipitated. It might be worry, it might be fright, it might be sorrow, it might be reflex pain, it might be alcohol, it might be a narcotic, it might be an anæsthetic, all so acting on the nervous centers as to interfere with the nervous stimulation of one or more organs engaged in digestion, and a gouty attack could be the result. If the nervous disturbance is continued, chronic gout may be the sequence.

Consequently, instead of wasting a great deal of time on the various theories as to the etiologic cause of gout, whether it be Haig's, Garrod's, Ebstein's, or Cullen's, it seems that gout may be defined as a non-infectious aseptic disease, due to a disturbance of the transformation of the protein food molecule, more especially the purin molecule, to the excretion end-product. Hence, as Hutchinson states, there is no one cause of gout.

There is nothing in the above assumption to diminish the importance of the predisposing causes of gout, such as heredity, age, habits, alcohol, overeating of rich foods, prolonged mental depression or worries, and such infections as leave lesions of the organs engaged in the above metabolism.

There seems to be no question that in some conditions of gout exacerbations, or acute attacks, may be caused by the eating of larger or smaller quantities of proteins containing purin bases (nucleo-proteins). This does not show the cause of gout; it shows only that in gouty patients whatever the digestive or metabolic or excretory cause may be, that such products, or such molecules, add to the trouble, and are not well metabolized. There is certainly no justification in declaring that uric acid is the cause of gout. It is, on the other hand, absurd to declare that such foods or such combinations of foods, or such combinations of foods and alcohol, as produce large quantities of uric acid will not make a gouty condition worse, as it will.

It is not the purpose of this paper to discuss the symptomatology or pathology of gout, but a word as to diagnosis. It does not seem to be necessary to have gouty joints, chalky nodes, gouty kidneys, concretions, or even shooting joint pains to make a diagnosis of a probable gouty condition, or that disturbances are present which may lead to future gout or are gouty now. An increased arterial tension, increased force of the heart beat, a little extra amount of urine, slightly increased frequency of micturition, repeated gastro-intestinal upsets, skin irritations, nerve pains, many headaches, especially

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occipital; irritability, nervous attacks, and many slight indispositions which are often too trivial to mention, but are the difference between well and ill, can many of them be set down as gouty, no organic disease having been found.

As I have many times stated, it is not necessary for Graves's disease, on the one hand, or myxœdema on the other, to be present for the thyroid to be disturbed. There are all ranges of hypersecretion of the thyroid, from normal to Graves's disease, and all degrees of under-secretion of the thyroid, from normal to myxœdema, and all causing symptoms. Similarly, when certain kinds of digestive, circulatory, excretory, or nervous symptoms are in evidence, the patient is often gouty, and proper treatment will make him well and perhaps prevent, or greatly delay, the actual gouty evidences.

To properly treat gout we must:—

1. Carefully study the functions of each organ.

2. Know the kinds and amounts of food ingested, and how well it is excreted, and especially how the nitrogen in the urine is excreted; how much urea, how much uric acid.

3. Arrange the food and liquids ingested to meet the defects discovered in the functioning of the organs and in the deficiencies in the excretions.

4. Treat or modify all complications present.

In other words, there is no one way to treat or manage chronic gout.

It is superfluous to enumerate to this audience the diets recommended by the different students of this disease. Suffice it to say, as Satterthwaite has pointed out, that if the combined advice of four or five of these men were taken, the patient would have nothing to eat or drink, and the gout would disappear, and so would the patient. This *reductio ad absurdum* proves that each patient must be individualized, and the foods and drink allowed which are found proper for him, and his diet may be markedly different from the diet of the next patient. Even the amount of water that the patient should take is a subject of wide variation. The intake of water should be restricted in patients with poor gastric digestion or insufficiency of the gastric juice; when the patient is anæmic; when there is much arteriosclerosis; when there is cardiac weakness, and when there is kidney insufficiency. On the other hand, the amount of water taken should be increased when there is hyperacidity of the stomach; when there is liver sluggishness, with a tendency to jaundice and to the formation of gall-stones; when there is renal gravel; when there is a small amount of concentrated urine passed, and when the skin is dry.

That deposits of urates around the joints may at times disappear, as in rare instances, may gall-stones, may be an observed fact. There is no known treatment—medicinal, electric, hydrotherapeutic, or other—that will cause dissolution of such deposits.

The ordinary hygiene of a certain amount of daily rest, mental and physical; of fresh, dry air, when the patient can obtain the latter, and of such hydrotherapeutic measures as will render the skin healthy, are aids in the prevention of gouty symptoms, and all such means should be utilized to the extent possible.

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With exacerbations of gout, with more or less pain, we have yet to find a treatment more efficient than a calomel purge, saline laxatives, salicylic acid, and some form of colchicum.

A really acutely inflamed gouty joint should be treated like a rheumatic joint, viz., rest, moist sedative fomentations, morphine sufficient to stop the pain, a dose or two of coal-tar product, if needed, and the internal treatment just suggested.

I have seen small doses of thyroid extract, two or three grains a day, given for a long period, prevent the recurrence of acute gout, and this in patients who were prone to such attacks. It seems especially valuable for patients who are old.

THE UNITED STATES PHARMACOPŒIA—A THERAPEUTIC STANDARD.

By JOSEPH P. REMINGTON, Ph.M., F.C.S.

Professor of Theory and Practice of Pharmacy, and Director of the Pharmaceutical Laboratory of the Philadelphia College of Pharmacy, etc.

THE year 1820 was a memorable one for therapeutics, for it was the year in which the first United States Pharmacopœia saw the light. It originated through the desire of the physicians, of that time, to furnish an authoritative guide for the preparation of well-known medicines, in order to secure uniformity of practice, and above all to prevent serious mistakes and complications which were sure to arise from the use of foreign pharmacopœias, which were by no means uniform in the standards among themselves; and it was necessary for the apothecary to know what kind of tincture, syrup or infusion was wanted by the physicians, and hence there was much guess work at this period. This was not such a serious question for the country doctor, for he mostly prescribed from his saddle-bags or office, and many of them made their own preparations; and as the population increased and the infant republic cast aside swaddling clothes, the need for a national authoritative formula book became imperative; it was natural for the physicians of the country to make the first move, and it was natural that there should be a difference of opinion in the different districts or localities, with the result that a serious misunderstanding occurred, and two pharmacopœias were published in 1830, one in New York and one in Philadelphia, and this created some confusion.

In 1835 the plan of the New York Convention for the revision of the pharmacopœia of 1835, was abandoned, and the plan of the convention, held in Washington for revision in 1840, was carried out; since then but one pharmacopœia has been published each decade by a convention representing all parts of the United States, with the national societies and government departments sending delegates.

For a period of eighty years it will be seen that the United States Pharmacopœia has been issued by a body of men who represent therapeutics in its broadest sense. It had not been, up to this time, under the government control, as this term is usually understood, but the pharmacopœial conventions were organized in the most democratic manner conceivable. The various

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incorporated medical colleges, incorporated colleges of pharmacy, medical and pharmaceutical schools in the universities, State medical societies, State pharmaceutical associations, national medical and pharmaceutical associations, with the surgeon-generals of the army, navy, and marine hospital service, certainly make up a representative body from all parts of the United States, and the initial plan, started in 1820, remains in principle the same to-day, greatly enlarged and extended it is true, but the fundamental principle of its formation is identical.

In 1840, pharmacy received recognition in a most signal manner; the manuscript for the 1840 pharmacopœia had been prepared by the Committee of Revision, but the Philadelphia College of Pharmacy appointed a local committee to revise the pharmacopœia, and presented the work to the Committee of Revision. The latter body adopted the revision prepared by the pharmacists, and since this date pharmacy has been represented co-equally with medicine in the Committee of Revision; but while the pharmacopœias from 1820 to 1890 inclusive, proved generally acceptable and improved greatly each year as therapeutics progressed, the book was never a compulsory standard. It is true that ethical physicians and pharmacists accepted the work as authoritative, and the United States Government adopted the standards to regulate the admission of drugs into this country through the Custom House, still manufacturers and others did not regard the standards as obligatory, and it often became necessary for physicians to write upon their prescriptions the letters "U. S. P." after an ingredient which they wished to specify; but the passage of the Food and Drugs Act, June 30, 1906, made the United States Pharmacopœia the legal standard for the United States. The immediate effect of this legislation was to start a campaign of discontent from some manufacturers of chemicals and medicines. The special feature, which produced the greatest annoyance, was the necessity for revising nearly all of the labels for the products of the factory, for up to this time pharmacopœial names were only used occasionally, and each manufacturer, almost without exception, labeled his products according to his own ideas of what suited his own trade. Synonyms were very frequently employed, sometimes with disastrous effect. To give an illustration: a manufacturer labeled a pound bottle of Fluidextract of Cannabis Indica, "Indian Hemp"; another firm labeled his Fluidextract of Apocynum, "Indian Hemp." The dose of the latter was ten times that of the former, and on one occasion a retail druggist dispensed a Fluidextract of Cannabis Indica when the doctor wrote for Fluidextract of Indian Hemp, the doctor intending the druggist to dispense the Fluidextract of Apocynum; death resulted in this case from the confusion of names. The Latin official names should always be used in prescribing, because they are distinctive and purposely selected by the Committee of Revision to avoid accidents of this kind.

But one of the most beneficent results from the Food and Drugs Act has been the establishing of definite scientific names for drugs and medicines, the law requiring a compliance with the standards of strength and purity of the pharmacopœia. If the drug or preparation is labeled "U. S. P.," or if the pharmacopœial name is used without qualification, the preparation, which

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is made according to the pharmacopœia, can be sold; but the statement must appear on the label, showing in what respect it differs from the strictly made official preparation.

The wisdom of the framers of the Food and Drugs Act has been abundantly demonstrated, for if they had suddenly and without warning compelled a rigid compliance with a law which demanded *at once* the exclusive use of pharmacopœial preparations, the practice of medicine and pharmacy would have been almost paralyzed; for it must be remembered that the conditions prior to June 30, 1906, were such that immediate compliance would have been impossible. The regulations permitted six months time for manufacturers to re-label their products, and the wisdom of the Departments of Agriculture, the Treasury, and Commerce and Labor, was again proved, for they agreed to extend the time still further, so that no hardship would be placed upon the manufacturer who wanted to be honest and desired to comply with the law. A large amount of money was spent in new labels, and a large amount lost from the destruction of old labels. The essence of the Food and Drugs Act is that "the label must tell the truth."

Manufacturers also realized that there were some of the standards of the pharmacopœia which were too rigid, and some of the tests needed revision, and it became necessary to issue, in 1907, an official circular making additions and corrections. These were furnished without cost, to the purchasers of the book, in the form of a six-page circular, paged, so that they could be inserted in the pharmacopœia in a proper place, and the 40,000 buyers would not be subjected to the expense of throwing away a book which they had just bought, and which was immediately revised. The United States Pharmacopœia which is now sold (1908) contains the additions and corrections incorporated in the text; a spirit of fairness and justice, commensurate with the large interests which were involved, has thus pervaded this movement for the betterment of the practice of medicine and pharmacy, and the time has arrived to sum up some of the results following the passage of the Food and Drugs Act two years ago.

Honest manufacturers are now placed on an equal footing, and dishonest competition can now be successfully combated. An unscrupulous manufacturer, in times past, could buy a drug which was damaged, deteriorated or of inferior quality, and make from it fluidextracts, tinctures, syrups, etc., and the physician would not know how bad it was until after he had prescribed it for his patients. The unscrupulous manufacturer could, of course, afford to sell the pharmaceutical preparation at a much lower price, because the honest man could not effectively follow up the rascal, for there was no legal way to reach him. The Food and Drugs Act, being a national law, could only operate in what is known as "interstate commerce" or where goods were transported from one State to another, hence the unscrupulous dealer can still practice his nefarious business in those States where there is no State law covering the subject; but so strong was the popular sentiment throughout the country in favor of pure food and drugs that seventeen States at once followed in the footsteps of the national legislation, and enacted laws based on lines similar to those in the national act.

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The retail druggist was the next class to feel the pressure of the Food and Drugs Act; it must be stated, however, that the retail druggist, as a rule, complied with the standards of the old pharmacopœia more largely than the manufacturer, if we were to regard statistics and percentages, but it must be admitted that there were many cases of deviations from the strict letter of the pharmacopœia on the part of retail druggists.

One of the provisions of the Food and Drugs Act permitted a manufacturer, upon sufficient proof, to register his products, the department giving him a serial number, and the manufacturer could then protect his customer—the retail druggist—by selling his goods under a guaranty that they complied with the provisions of the law. If the retail druggist found, on examination, that the goods were defective, the manufacturer would make restitution, and this explains the meaning of the label so often seen on foods and drugs: "Guaranteed *by* the Food and Drugs Act of June 30, 1906"; but some manufacturers have taken advantage of the law to make it appear that the United States Government has examined their products and guaranteed them. This error should be corrected at once, and the information widely spread. The United States *does not* guarantee any goods; the label should read "Guaranteed *under* the Food and Drugs Act," which means merely that the Government has given the manufacturer a registered number, but the firm takes the responsibility that their goods are properly made, and does the guaranteeing.

Another feature of the Food and Drugs Act punished false or exaggerated statements with regard to medicines by providing a penalty for misbranding; statements which lead customers to believe that they are buying a pure article when they are not, are punishable under the law. Belladonna, opium, ipecac, cinchona, hyoscyamus, etc., must comply with definite standards or a manufacturer is liable to punishment.

The fixing of these standards was by no means easy, particularly in the case of crude drugs; for instance, it would not do to establish a standard for the alkaloidal content of a drug at a figure so high that it would only apply to a very small or selected sample of drugs, or which could only be produced at exceptional seasons in the year. It is well known that crude drugs from growing plants, suffer largely from a very dry season or possibly a very wet one, and if the pharmacopœia were to set a standard at an unreasonable figure, it might very easily happen that the medical profession would find itself in the position of not being able to obtain anywhere in the country ipecac, opium, belladonna, etc., and the result would be that a great loss and inconvenience would occur in the case of imported drugs, particularly if they would not be admitted into the United States through the custom houses; therefore, it would seem to be common sense and good judgment to fix the standards high enough to exclude inferior or poor drugs, and low enough to prevent the possibility of excluding the drug entirely from use by the medical profession. After all it practically makes no difference to the practitioner if he uses 5 minims of a drug or 3 minims as a dose; but it is of the first and utmost importance that the preparation itself shall always be uniform in quality, and of the highest practical efficiency. This adjusting of the standards then became

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the most important function of the Committee of Revision of the United States Pharmacopœia.

But what shall be said about the large number of drugs for which analytical chemistry is unable yet to devise a standard; for these there is nothing left but to require a test of practical efficiency, through the administration of the drug to individuals, and this brings us to the discussion of a very important subject in connection with the next revision of the United States Pharmacopœia, which we must look forward to in the short time of only two years hence (1910). The great need in therapeutics to-day and in pharmacopœial revision is more exact knowledge for fixing the therapeutic efficiency of drugs which do not depend upon the presence of alkaloids or their principles, for the quality of alkaloidal drugs can be determined, with reasonable accuracy, through what are known as assay processes. When the Eighth Revision of the United States Pharmacopœia was started, the Committee of Revision were instructed by the convention, to make the assay processes as simple as possible, so that they could be carried out by those having a fair knowledge of analytical methods.

Physiological methods, at that time, were not sufficiently accurate to be trusted for insertion in the pharmacopœia; since then many improvements have been made in these methods; but the great need to-day in pharmacopœial revision and in the broad field of therapeutics is for the establishment of a laboratory for proving the *therapeutic efficiency of drugs*. The Committee of Revision should have such a laboratory at its disposal. It seems reasonable that the next committee will have to have a laboratory for proving and trying out all tests for organic and inorganic substances, and a chemical laboratory of this kind is a necessity. The manufacturing chemists and pharmacists of the country are freely giving the results of their work to the committee, especially within the last year; but it is not easy to establish a laboratory for proving the therapeutic efficiency of drugs and preparations by other than analytical and chemical methods. We need, greatly, efficient methods for determining the strength of such drugs as ergot, rhubarb, senna, cascara sagrada, digitalis, and useful drugs of this character. May I be permitted to suggest to the American Therapeutic Society that here is a grand field for usefulness? Is it beyond the reach of possibility for this society to elect a committee of public spirited men who would be willing to solicit contributions from other public spirited men, who are willing to contribute from their surplus a sufficient sum to found a "Therapeutic Laboratory" for proving the efficiency of medicines? Such a laboratory would require a considerable sum for its maintenance, for the reason that specialists of ability would have to be trained to work out satisfactory methods. There are many methods available now, mainly devised by European workers, which could possibly be developed by research and study, and why is not the founding of such a laboratory well within the functions of this organization. We have in this country the Johns Hopkins University, University of Pennsylvania, and many other universities devoted to original research, and they have added much knowledge in this direction; but it is not so much in the direction of original research that

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the need at present is felt, as for a "proving and trying out" laboratory. If we could have one which would give attention mainly to taking up the researches which have *already been recorded* in our chemical and therapeutical journals, and trying and testing various methods which have been already published, and finally selecting the best, then practical results of great value would come to pharmacopœial revision. Physicians very frequently say to the writer that the pharmacopœia is a book for the pharmacist and chemist, and that the doctor is not much interested in it, and it is undoubtedly true that this spirit prevailed in the last four revisions of the pharmacopœia; but with the assembling of the next convention in 1910 everything points to the fact that the physicians of the United States are going to take a very great interest in their pharmacopœia. If it were possible for this society to establish a laboratory somewhat upon the lines here suggested, it would give to the medical profession a lasting work, which not only would benefit the pharmacopœia, but raise therapeutics to a scientific position which it has not yet reached in this country, and proving of everlasting value to suffering humanity.

The American Medical Association is doing yeoman service in investigating proprietary, synthetic, and other medicines, and the Bureau of Pharmacy and Chemistry is entitled to the gratitude and hearty support of every physician. It is not suggested that the work of the "Therapeutic Laboratory" should interfere or duplicate the work of the American Medical Association, but co-operate with this body in a somewhat different line of work, that of proving and testing *official* drugs and those which are in common use and have established repute. No one who has looked into this subject even casually can doubt the necessity of such a laboratory. It should be placed in the hands not only of competent men, but honest workers. Commercialism has been the bane of our existence, and yet there are commercial houses doing excellent and worthy work; but there is the greatest need of an authoritative court of final resort whose researches would be regarded by all as untainted by personal interests, and far above suspicion of private gain, but solely in the interest of science, for "science is truth."

The Therapeutics of Diseases Which Involve the Internal Secretions

HYPERAESTHETIC RHINITIS (HAY-FEVER): ITS PATHOGENESIS AND TREATMENT.

By CHARLES E. de M. SAJOUS, M.D.
PHILADELPHIA.

Pathogenesis.—About twenty-three years ago I called attention[1] to the importance of general adynamia as a predisposing cause of this disease, after

1 Sajous: "Lectures on the Diseases of the Nose and Throat," 1885.

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a study of 40 cases. Of these patients 35 per cent. had near relatives who presented a clear history of hay-fever or rose cold, and 42 per cent. had asthmatic near relatives. The early history of these cases also pointed to considerable vulnerability to the diseases of childhood: 40 per cent. had had six of these diseases; 60 per cent. had had five. These disorders were whooping-cough, measles, mumps, chicken-pox, scarlet fever, and diphtheria or croup. A comparison of these 40 cases with forty subjects taken haphazardly who had never suffered from either hay-fever or asthma, emphasizes this vulnerability of future hay-fever sufferers; while the aggregate of the diseases of childhood in the latter was 189, in the normal subjects it was 92, less than one-half.

A number of authors have independently urged a similar underlying cause: Joal (1895) and Cartaz, for example. Fink holds also that "the patient is always neurasthenic." A kindred cause was suggested by Guéneau de Mussy, who, as far back as 1868, attributed the disease to "arthritism," a synonym for our "gouty diathesis." Leflaive, Bishop, Grube, and others, have also urged this view—which obviously harmonizes with my own, the gouty diathesis being, to a certain extent, a manifestation of adynamia. Interpreted with the functions of the ductless glands (my version of these functions at least) as factors of the problem, this becomes all the more evident, in that I attribute primarily this diathesis to inadequate breaking down of wastes. This is shown by the following definition, submitted in a more recent work[2]: "The gouty diathesis is a chronic disorder of metabolism, due to inability of the adrenal system to insure, through its active agent, the auto-antitoxin (leucocytic and plasmatic), the conversion of food nucleins into harmless, eliminable end-products. This inability may be actual, *i.e.*, due to hypoactivity of either of the organs of the adrenal system; or passive, these organs, though normal, being unable to provoke the formation of sufficient auto-antitoxin to insure catabolism of the excess of wastes with which the lymph and blood are burdened when overeating is indulged in. In either case, the blood contains more or less toxic wastes of the purin type, which incite the various disorders usually ascribed to the gouty diathesis."

Can we, however, include hay-fever among the disorders incited by the toxic wastes in the blood of gouty subjects? Such a conclusion would soon meet its doom when confronted with a few familiar facts. How, in that case, could we, for example, explain the fact that the vast majority of gouty subjects do not have hay-fever? How account for the immediate cessation of the attack when the patient goes to sea or to localities in which the disorder does not prevail? Were the gouty or any other diathesis its exciting cause hay-fever would obviously occur regardless of locality. It is plain that we can only consider this feature of the disease as a *predisposing cause*. In other words, while we cannot say that hay-fever is caused by gout or the so-called "uric acid diathesis," adynamia, neurasthenia, etc., we can say that such a debilitated state of the organism prepares it for the development of that disease.

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[2] Sajous: "The Internal Secretions and the Principles of Medicine," Vol. II, p. 1500, 1908.

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What is the morbid process which, under these conditions, initiates hay-fever?

Two prominent features of the disease have long been recognized: its identity as a neurosis (Beard, 1876) and the fact that during a paroxysm at least, the nasal mucous membrane is oversensitive (Roe, 1883). The latter factor is so marked that many years ago I suggested, in lieu of the absurd term "hay-fever" (absurd in the sense that the disease may be provoked by many irritants other than new hay), that of "hyperæsthetic rhinitis," which has been accepted by many classic writers. But in this hyperæsthesia of the Schneiderean membrane we must only see the external manifestation of a similar condition of deeper nervous structures, viz., of the general nerve center to which the sensory impulses are transmitted. It is this central disorder which the gouty diathesis or the general adynamia (inherited or acquired through disease we have seen) awakens, the center involved being rendered hypersensitive by the imperfectlly catabolized, and therefore toxic, waste products which are ever present in the blood in this class of cases.

The identity of the center—the central nucleus of the fifth pair—was recently located by myself[3] in the pituitary body. Cyon has previously observed that after removal of this organ the nasal mucous membrane at once lost its sensitiveness, and that the most active stimulants, including ammonia, failed to elicit the least reaction: sneezing, lacrymation, etc. Briefly, the nasal mucous membrane is oversensitive because the center which receives its sensory impulses—that of the fifth pair—is itself oversensitive, and the excessive sneezing, lacrymation, etc.—that constitute the symptom-complex of the disease (all complications, asthma, photophobia, etc., being the result of involvement of neighboring nuclei, the posterior pituitary being, in the light of my researches the general center of common sensation) are but exaggerated expressions of physiological functions.

The next question in point is the periodicity of the disease. Why does it appear—in typical cases—at stated seasons, oftentimes recurring each year on, or near, the same day? This only serves to prove the correctness of the view (Elias Marsh, 1877) that certain pollens are the exciting factors of the paroxysms, and that when these pollens, the principal of which is that of rag-weed, appear in the air, the disease is awakened. The fact that these identical pollens —when preserved in their normal state—may provoke an attack at any time of the year, at sea, or in countries where the patient is otherwise immune, emphasizes the solidity of Marsh's view.

The especial sensitiveness of the nasal mucosa to certain pollens has been attributed to specific physical and chemical properties, but this academic question is still *sub judice*.

TREATMENT.—In certain cases, what might be termed a pseudo-form of hyperæsthetic rhinitis is provoked by the presence in the nose or naso-pharynx of polypi, exostoses, turbinal hypertrophies, etc. (Daly, 1881). These projecting morbid tissues, mainly by irritating the sensory terminals of the surface

[3] Sajous: *Ibid*, p. 1709.

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opposed to them, render hyperæsthetic, not only this surface, but also the center to which the sensory impulses are transmitted, that of the fifth pair. Such cases are often not only sensitive to many pollens, but also to many commonplace irritants. They are readily cured by properly executed removal of the morbid growths, but in such a way that no adhesions or senechiæ are left between the opposed surfaces. Cauterization of the hyperæsthetic areas caused by them, by the local application of glacial acetic acid, chromic acid, or galvanocautery, tends further to insure recovery.

Irrespective of any organic disorders of the nasal cavities, the disease may be arrested—at least for a time—by similar applications to hyperæsthetic areas, the latter being detected by sweeping a flat probe gently over the mucosa, both of the septum and of the surfaces of the turbinals and of the floor of the cavities, the itching caused by this procedure being greatly increased when the oversensitive areas are encountered. The results obtained under such conditions may be shown by two illustrative cases:—

Mr. S., of Philadelphia, was suffering intensely; notwithstanding this, glacial acetic acid was applied to both cavities, eight applications in all being made,—four on each side. A week later he wrote that he had had no trouble since, and that, being a member of a cricket club, he had resumed play in the field without suffering the least inconvenience. He continued his visits, however, until the entire respiratory tract of the anterior cavities had been cauterized. The following year the patient returned stating that the affection had re-appeared on the usual day. One cauterization on each side arrested the paroxysm, and no recurrence took place during the entire season.

Mr. B., of Chicago, applied for treatment five days after the onset of the paroxysm. Having come to Philadelphia expecting that the cauterizations would only require one week, and being obliged to return home at the end of that time, the applications were made every day to each nostril. The attack ceased after the third sitting and did not return, notwithstanding the railway trip, which before had caused intense suffering.

Such results are not always obtained, however; nor is the disease checked permanently in any but a very small proportion of cases. It has been suggested that beneficial effects are obtained from local treatment only through suggestion. But such a view is erroneous, for in one of my cases applications of cautery to one nostril only caused it to remain free during all other succeeding attacks.

To understand the *modus operandi* of remedies administered internally, the manner in which the morbid symptoms are awakened by the atmospheric irritants—as interpreted from my standpoint—is necessary. When the specific irritants appear in the air the violent sensory impulses transmitted to the trigeminal center provoke (through a process explained elsewhere[4]) reflex dilation of the arterioles which supply blood to the mucosa of the nose, sinuses, conjunctivæ, etc., and all these structures become intensely congested—the

[4] Sajous: "Internal Secretions and the Principles of Medicine," Vol. II, p. 1714, 1907.

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exciting cause of the distressing symptoms. Beneficial effects can be obtained, therefore, by remedies which either locally, or by acting on the sympathetic center, provoke constriction of the dilated arterioles.

As to local remedies, a 5- to 10-per-cent. solution of cocaine sprayed into the nostrils, is very effective, but I only mention this remedy to condemn it, owing to the danger of producing the cocaine habit in the patient. Far safer and just as efficient is a weak—1 to 10,000—solution of adrenalin chloride, prepared with normal salt solution, which suffices to contract the arterioles (by inciting active metabolism in their muscular coat, as I have pointed out elsewhere[5]) in most cases, though occasionally a stronger solution is required. The adrenalin solution by depleting the engorged mucosa affords the patient considerable comfort. This effect may be sustained by spraying over the constricted mucosa a 5-grain-to-the-ounce solution of menthol in albolene, benzoinol, or any other light oil. A saturated solution of quinine used as a spray, followed by the application of an ointment composed of 30 grains of quinine and 1 ounce of vaseline, are recommended by Fulton. Insufflations of orthoform have also been extolled by Lichtwitz. All these measures should only be regarded as palliatives, however; they serve to relieve stenosis, allay irritability, and control excessive secretion.

Intense itching of the eye-lids, especially near the lacrymal caruncle, sometimes causes severe suffering. This is markedly allayed by flooding the eyes with hydrant water, using for the purpose the top of a flower sprinkler attached to a rubber tube connected with the spigot. Cold compresses, *i.e.*, cloths wrung out of ice water, applied to the sufferer's forehead and face, and renewed as soon as they become "the least bit" warm, afford marked relief, according to Wolner, when kept up constantly for about three hours, and off and on for about six hours. Photophobia is another annoying symptom—also due to dilatation of the arterioles of the fundus and congestion—a result also of the central supersensitiveness. Blue or smoked glasses tend materially to alleviate this symptom.

The internal remedies indicated in this disease can be divided into two classes: those which, like the local remedies, tend to cause constriction of the dilated arterioles; and those which tend to counteract the predisposing cause of the disease, whether it be the gouty diathesis, general adynamia or neurasthenia. Of the first class, belladonna has given me the best results when used in conjunction with local treatment. In adults, $\frac{1}{120}$ grain of atropine is given three times daily until the slight dryness of the throat occurs, when the effect may be sustained by one or two doses daily. When asthma complicates the case, I employ instead the following preparation:—

℞ Tinct. of belladonna ..... ℥ss.
Potassium iodide ..... ʒij.
Water, q. s, to dissolve the iodide.
Syr. of orange peel, q. s. to make ..... ℥iij.

M. Sig.: One teaspoonful every three hours until the paroxysm is arrested, then every six hours.

[5] Sajous: *Ibid*, p. 1171.

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While the belladonna, by stimulating the sympathetic center in the pituitary body, causes constriction of dilated arterioles which supply the entire respiratory tract, including the bronchial mucosa, the iodide, mainly by exciting the adrenal center, enhances general oxygenation, and, therefore, the catabolism of toxic wastes which, as we have seen, accumulates in the blood of gouty subjects. Other agents which promote constriction of the arterioles, antipyrine, acetanilid or acetphenetidine, are effective in some cases when given in 5-grain doses repeated as needed. Better than the coal-tar products is codeine, however, when given in ¼-grain doses every four hours. Dunbar's pollantin has been lauded by some clinicians, but my experience with this agent has been too inadequate so far to enable me to express an opinion of its merits.

As to the remedies which tend to counteract the gouty diathesis, the only one which has served me faithfully is desiccated thyroid, which acts by enhancing, as do the iodides, the catabolism to toxic wastes. It may be given in 2-grain doses twice daily for three days, then once daily only. Strychnine, in 1/30-grain doses after meals enhances the action of thyroid extract by stimulating the vasomotor center and increasing the oxygen intake. When the use of these agents is begun two or three weeks before the expected attack, its severity and duration are often reduced.

Editorial

UNTRAINED MEN AS ANAESTHETISTS.

THE abuse of anæsthetics by untrained men is one of the dark spots in present day surgery.

Practical teaching on this subject should begin in the second or third year of student life, and under the guidance of trained men students in groups of two or three should learn the need of thorough physical examination of patient before administration.

The proper method is to eliminate fear on the part of the patient.

How to administer straight ether by the drop method, insistently insinuating the drug, producing a quiet, peaceful sleep.

Only enough should be given for the operation performed. The depth of anæsthesia being well recorded by the diaphragmatic breathing sound through the tone and the sensitive pupillary reflex.

Free inlet and exit of air is usually best obtained by holding the jaw forward, and proves a great reliever of shock, requiring less ether, less work for patient, and induces less nausea afterward.

The importance of ether shock has never been rightly estimated by surgeons or some radical steps would be taken to create a chair of anæsthetics in our colleges and encouraging the thorough teaching of anæthesia to all students.

COLLIN FOULKROD.

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Cyclopædia of Current Literature

AMYL NITRITE IN THE HÆMOPTYSIS OF PULMONARY TUBERCULOSIS.

The points in favor of the treatment of hæmoptysis by amyl nitrite are summed up by the writer as follows: It acts instantly, producing an immediate fall in blood-pressure at the bleeding point, thus giving time for clotting to take place, while the bleeding usually ceases at once. It apparently produces an intense anæmia of the lung parenchyma, without any reactionary hyperæmia, such as follows the use of adrenalin. It does not interfere with coughing, and so enables the patient to get rid of the effused blood as soon as possible, which might otherwise diminish the already impaired respiratory capacity, or lead to septic pneumonia or a rapid extension of the tuberculous mischief. Capsules can easily be carried by the patient, who can then inhale the contents of one as soon as ever the hæmoptysis begins, thus treating the case at once, and so often preventing a worse attack. The writer usually gives patients who have had one attack a capsule or two to carry about with them, as he considers it to be the most efficient drug in the treatment of such cases, and by far the best one to administer first. George A. Crace-Calvert (British Journal of Tuberculosis, July, 1908).

ANÆMIA AND LEUKÆMIA, REPARATIVE PROCESSES IN.

The practising physician who has to do with differentiated tissues and organs but seldom observed an example of a reversion on the part of these structures to an earlier, less specialized type so far as their function is concerned. The pathologist, on the other hand, in the innumerable phenomena and results of disease that he observes by the finer methods of the laboratory, frequently meets with instances of such reassumption of type and function on the part of organs or their elements when affected by an extraneous or irregular new factor. Thus Meyer has shown (Münchener medizinische Wochenschrift, June 2, 1908) that the liver, the spleen, and frequently the lymph nodes assume a fœtal type in grave or pernicious anæmias as far as their cellular character is concerned. Erythroblastic cells and newly formed leucocytes appear in them, while the blood-making organ of the adult, the bone marrow, shows likewise a picture of greatly increased activity.

Meyer, together with Heinecke, has interpreted these phenomena as reparative in nature in opposition to another conception of the findings which seeks to interpret them as the primary result of some unknown harmful agent. Von Domarus has greatly strengthened the standpoint maintained by Meyer by producing experimental anæmias in animals and showing that the changes in the blood-making organs of intrauterine as well as of extrauterine life were similar in these animals to those observed in patients with pernicious anæmia. The view of anæmia defended by these authors answers very well to the modern conception of the phenomena of disease as processes of adaptation or compensation under new surroundings. To accept it, however, means to differ completely from some recently practised measures in the treatment of

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anæmias and leukæmias. The removal of the spleen in lymphatic leukæmia would of course be a highly illogical procedure. The exposure of the bone marrow to the effect of the x-rays, too, would simply mean the interference with local reparative processes without sufficient reason to believe that their continuation was harmful to the rest of the organism. Editorial (Medical Record, June 27, 1908).

AORTIC REGURGITATION.

Temporary aortic leakage is not so uncommon as is usually held by clinicians. More attention should be paid to the atypical forms which a murmur may assume. The capillary pulse is the most constant sign, and its frequency in other lesions is probably greatly overestimated by reason of the fact that an existing aortic regurgitation may be readily overlooked. A capillary pulse in neurasthenic patients is frequently attributed to the neurasthenia rather than to its true cause. A modification or absence of the second carotid tone is a most valuable and constant sign in cases unassociated with marked arteriosclerosis. No examination having reference to the integrity of the heart is complete unless the carotid tones and capillary pulse are carefully investigated. C. L. Greene (Archives of Diagnosis, April, 1908).

APPENDICITIS, MASKED.

Six types of masked appendicitis are described by the writer: 1. Cases in which all subjective symptoms are mild, temperature and pulse low. In these cases the blood-count will help. 2. Cases with general symptoms no more marked than in (1) with the blood-count deceptive. 3. Cases of evident abdominal inflammation, in which the pain is referred to a region distant from the real source of trouble. 4. Cases of apparent recovery, yet in which there is a latent abscess which on resumption of the usual occupation may rupture with fatal results. 5. Such an abscess may become encysted and remain quiescent for a relatively long time. 6. Chronic subacute appendicitis, in which tenderness may always be found on palpation, but in which fever is rarely present.

He concludes as follows: One attack of the disease confers no immunity against future attacks. On the contrary, a primary attack predisposes to secondary attacks. Secondary attacks are apt to be progressively serious. Therefore, as no single attack constitutes a terminal fact in medicine, opinions as to the frequency of recovery, if used as a basis for reasoning concerning either prognosis or treatment, are illogical and dangerous. Cases of masked appendicitis are very frequent, the most common being the first type mentioned. These are the cases which furnish most of our mortality and cases of abscess. If these patients are treated on the theory that a much greater proportion than 70 per cent. of all cases of disease recover without operation, the accidents and mortality of the disease will be greatly increased. No one can tell anything about the real condition of the appendix in any given case of the disease without inspection, and inspection means removal. This is the only safe procedure unless from other circumstances any operation is contraindicated. A. T. Bristow (Long Island Medical Journal, April, 1908).

ARSENIC, ABUSE OF, IN THE TREATMENT OF DISEASES OF THE SKIN.

It may be generally stated that arsenic is a drug of undoubted value in a lim-

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ited number of skin diseases, especially in psoriasis, lichen planus, and acute pemphigus. It is useful in the quiescent stages of the first two diseases when the active inflammatory symptoms have subsided. Even when used in appropriate cases and at the proper stage, it often fails lamentably to fulfill one's expectations. It is, therefore, a remedy of great unreliability. In the remaining long list of skin affections, arsenic is either of slight value or of no utility whatsoever. It sometimes accomplishes some incidental good in skin diseases when its administration is indicated by the condition of the patient's nervous system.

Arsenic is excessively and indiscriminately prescribed by practitioners in the treatment of skin diseases. Evidence of its frequent and unnecessary administration is too often brought to the attention of the specialist. The practitioner's rule appears to be "when in doubt as to treatment, give arsenic." The specialist, on the other hand, withholds arsenic except when specially indicated. Those who are best qualified to judge find that other remedies, internal and local, in many instances render the use of arsenic unnecessary.

Arsenic is a potent drug exercising a stimulating and later an irritative influence upon nerve structure. When used in too large doses or over protracted periods, it may produce profound structural changes in the nerves. Sensory, motor, and trophic disturbances of a serious character have resulted from its injudicious use.

The noxious influence of arsenic is often exerted upon the skin. Not only are inflammatory dermatoses commonly aggravated by its use, but a great variety of skin manifestations may be produced by toxic doses. In chronic arsenic poisoning, erythematous, papular, and vesicular eruptions may appear simulating various dermatoses. A generalized pigmentation occasionally develops, and hyperkeratosis of the skin, especially of the palms and soles, is not uncommon. A considerable number of cases of cancer of the skin have now been reported following the long-continued use of arsenic. Some of these have necessitated amputation of members, and at least four cases have terminated fatally.

In view of the serious results mentioned, practitioners should exercise more caution in prescribing arsenic. The drug should not be administered unless there is a good reason for its use, and, above all, patients must be instructed not to continue the remedy upon their own judgment, as is so commonly done. Physicians should not permit prescriptions for arsenic to be renewed without their specific sanction. Jay F. Schamberg (Therapeutic Gazette, June 15, 1908).

ARTERIOSCLEROSIS: ITS PATHOGENESIS AND TREATMENT.

The author protests against the assumption that arteriosclerosis is an affection of old age. He has observed it frequently between 30 and 40, and has noticed that its course is more rapid in the comparatively young. The main factors are gout and lead poisoning. Tobacco, liquor and alimentary toxæmia have long been overestimated, he thinks, as factors in arteriosclerosis. They act only in case of a tendency to gout or lead poisoning. The practical result of his views is that members of families which display a tendency to gout should be treated early, seeking to modify that condition of the nervous system which predisposes to arteriosclerosis.

The writer prescribes potassium io-

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dide, from 1 to 3 gm. (15 to 45 grains) in twenty-four hours, continuing this for months and years with intervals of a week each month. He orders at the same time a drastic purgative to promote the elimination of the iodide. Hypertrophy of the heart with high arterial tension and nocturnal polyuria with lesser density of the urine are signs of diffuse arteriosclerosis. Brine baths, alcohol rubs and tepid douches, by soothing the nervous system, favor the elimination of waste. The practitioner should seek to ward off the impending uræmia, asystole or cerebral insufficiency, and treat them with the greatest energy if already developed. Lancereaux (Bulletin de l'Académie de Médecine, June 2, 1908; Journal of the American Medical Association, June 11, 1908).

CARCINOMA OF THE RECTUM, TREATMENT OF.

No single operative procedure for carcinoma of the rectum should be always carried out to the exclusion of others. The decision between the perineal and combined methods depends chiefly upon the feasibility of preserving the efficiency of the sphincter ani muscle, provided the growth is removable by the low route. When the combined method is used, an immediate abdominal anus should be formed unless the continuity of the natural passages can be restored with exceptional facility. Institution of a colostomy at a previous operation is an embarrassment rather than an aid. Joseph A. Blake (Annals of Surgery, July, 1908).

CONSTIPATION, OIL INJECTIONS IN.

The use of irrigations of sterile alcohol-free oil is recommended by the writer in the treatment of constipation. A fountain syringe is employed to which a soft rubber catheter, which is passed about three inches into the rectum, is fitted. The oil is introduced about two hours after the evening meal, the patient lying on his back or left side. The quantity given is from about 2 to 7 ounces, and its temperature should be about 95° F. After the tube is inserted the reservoir of the syringe is elevated to about three feet above the patient and the oil is allowed to flow slowly into the rectum. Should there be difficulty in inserting the tube, the rectum should be cleared by means of an irrigation of saline solution. The oil should be retained all night, and in the morning, on rising, an irrigation of about a pint of saline solution at 100.5° F. is taken. This should be retained for a few minutes. The oil injections are given daily at first, but after a week the intervals may be lengthened until one every five days becomes sufficient. The treatment may, at first, cause colicky pains, but these soon cease. Vidal (Journal de médecine de Paris, vol. xx, No. 2, 1908; American Journal Medical Sciences, July, 1908).

DIABETES, SURGICAL OPERATIONS IN.

It is pointed out by the author that even in cases in which the general constitution of the patient seems to guarantee a good result coma and death have followed operation, while in relatively far-advanced cases good results of operative intervention and improvement in diabetic symptoms have followed. It is wise to prefer palliative measures in small ailments, such as ingrown toe-nail, and even corns. That a good result will ensue cannot be foretold with exactness, so that prognosis must be cautious. General anæsthesia, especially chloroform, increases the danger of coma. On the whole, the prog-

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nostic significance of operation on diabetic patients may be somewhat modified by sustaining the nutrition, the strength, and the resisting power of the body by preventing or counteracting acidemia, and by reducing infection and the duration of operative procedures to a minimum. L. T. Riesmeyer (Journal Missouri State Medical Association, May, 1908).

DUODENAL ULCER, DIAGNOSIS AND TREATMENT OF.

The writer answers in the affirmative the questions as to whether it is necessary and important to be able to diagnosticate duodenal ulcer with accuracy, and whether such diagnosis can be made with reasonable certainty. The reasons for the first question are the greater seriousness of duodenal than gastric ulcer, the greater liability to profuse and dangerous hæmorrhage, the lesser likelihood of permanent cure by medical means in duodenal than in gastric ulcer, and the greater importance of surgical intervention.

Duodenal ulcer can be recognized clinically with as great a degree of accuracy as gastric ulcer, gall-stones or even appendicitis. The characteristic symptoms are pain of a special type; a feeling of fullness and discomfort after food, with eructations of gas, and generally some hyperacidity; local tendencies over an area just above and to the right of the umbilicus; hæmatemesis and melæna; some degree of dilatation of the stomach exists in most cases from an early stage of the affection.

As to operation, the author's practice is to do a jejunostomy (posterior operation when possible), and then close or partially close the pylorus by a few Lembert sutures. Seventeen cases of gastro-jejunostomy are reported for duodenal ulcer and nine cases of perforating duodenal ulcer, all terminating in recovery. A. B. Mitchell (Dublin Journal of Medical Science, June, 1908).

ENTEROPTOSIS, SURGICAL PHASES OF.

The writer considers that no case of enteroptosis should be operated upon until medical and mechanical means have been exhausted without relief. Cases of ptosis due to a congenital habitus will not be relieved by operation, except in the rarest instances; they should not be considered, therefore, as amenable to surgical treatment. In order to arrive at an accurate estimate of the degree of ptosis, the x-rays should be employed.

In cases following child-birth, where the abdominal wall is very lax, thus destroying the equilibrium between the extra- and intra-abdominal force, resection of the relaxed ventral tissue through the method suggested by Webster may give perfect relief, provided the diastasis has not been of such long standing that the abdominal organs are far below their normal levels. In the latter case, in addition to the Webster operation, it may be necessary to suspend the colon by means of the omentum, thus relieving the stomach of the weight of this organ, and at least temporarily supporting the stomach until there may be a natural shortening of its ligaments.

In the simple gastroptosis without marked participation of the colon, the Beyea operation may be the one of preference. If the cardiac end of the stomach has been greatly dilated, forming a kink at the pylorus and a decided notch in the lesser curvature, a no-loop gastro-enterostomy may be necessary, with closure of the pylorus. (This is

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merely a suggestion by the writer, since he has had experience in only one case with this operation). In exaggerated cases of ptosis of the transverse colon, where a pendulous loop is formed which produces stasis of the fæcal current, as well as tending to twist upon itself, with symptoms of partial obstruction, nothing less than excision of the redundant loop with end-to-end anastomosis will cure the case.

In cases of redundant sigmoid, with more or less constant pain in the left side, associated with obstinate constipation, a suspension of the sigmoid, so as to pull it up out of this bad position in the pelvis, may give entire relief. On account of the constant mobility of the sigmoid, a recurrence may be noted. In exaggerated cases of redundant sigmoid, attended with symptoms of extreme constipation, verging onto obstruction, a resection of the sigmoid may be advisable.

In all cases a carefully fitted abdominal support, or carefully adjusted straight front corset, should be worn after operation, in order to give as much artificial support as possible. John G. Clark (University of Pennsylvania Medical Bulletin, June, 1908).

FUNCTIONAL DYSPEPSIA, RATIONAL TREATMENT OF.

For cases of hypersecretion, the writer advises a bland diet rich in fat, into which milk, eggs, meat, and fish enter freely, while starchy foods are kept within strict limits. For medicinal treatment bromides and soda or magnesia are strongly recommended. In cases of insufficient secretion, the writer says that the actual composition of the diet is a matter of indifference, provided it be presented to the stomach in a suitable mechanical form. In addition, he recommends bitters and small doses of soda before meals. Where there is excessive motility and pyloric spasm, in addition to a bland diet, he recommends the local application of heat to the epigastrium, while in motor insufficiency he believes the most important factor to be frequent meals, dry in character and small in amount. For hyperæsthesia he is strongly in favor of bismuth. R. Hutchinson (British Medical Journal, April 11, 1908).

KIDNEY-STONE, DIAGNOSIS AND TREATMENT OF.

The work of the last ten years has placed the diagnosis and treatment of kidney-stone on an established basis. The diagnosis is determined by a process of exclusion and confirmed by the x-ray. When this is definite, the treatment should be surgical removal, except in cases of small stones, which may be passed, or in cases of extreme age, or in the presence of organic lesions which strongly contraindicate operation. In a single stone in the pelvis of a comparatively sound kidney, the operation of pyelotomy with closure is the operation of choice. In cases with large stone and, especially multiple stones, in both pelvis and calices, and in cases with considerable infection, nephrolithotomy, with or without drainage, should be resorted to.

In cases in which stones are found in a kidney which is so altered as to be of little value to the patient and where kidney sufficiency has been demonstrated and the other kidney is not involved, primary nephrectomy should be done. In primary stones involving but one kidney, pyleotomy and nephrolithotomy are comparatively safe procedures, carrying with them but from 3 to 4 per cent. of risk. Where both kidneys contain calculi, the dangers of the pathological con-

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dition and the operation for its relief naturally increase. And where, because of infection and destructive processes, nephrectomy is required, the dangers of the operation will depend upon the integrity of the other kidney and its functional capacity and the dangers resultant upon the surgical removal of the diseased organ.

In the writer's own series of 52 operations done for kidney-stone, he has had but one death from nephrolithotomy and two deaths from secondary nephrectomies; both made extremely difficult because of the necessity of digging the kidney remnant out of dense scar tissue due to long-standing perinephritic inflammation. On the whole, we can to-day regard the diagnosis and treatment of kidney-stone as one of the great triumphs of modern surgery, both from the standpoint of relieving suffering and saving life. Arthur Dean Bevan and Joseph F. Smith (Surgery, Gynecology and Obstetrics, June, 1908).

LARYNGEAL MANIFESTATIONS IN LOCOMOTOR ATAXIA AND MULTIPLE SCLEROSIS.

The larynx is frequently the seat of serious affections in tabetics. Laryngeal crises are met with so often that they are almost of pathognomonic significance. Unilateral and bilateral paralysis of the postici muscles are the affections par excellence in tabetics, but a unilateral paralysis of the recurrent nerve, often with the vocal cord in a hyper-abducted position, as mentioned by Harland, is nothing uncommon. The abductor fibers of the recurrent laryngeal nerve are affected primarily in tabes as well as in multiple sclerosis. The voice in tabetics is often not changed, in spite of advanced lesions.

In order to reach a positive diagnosis all these cases have to be observed during a considerable period. In multiple sclerosis there is frequently present a subjective dyspnœa that cannot be explained by the objective signs. Wolff Freudenthal (Journal American Medical Association, June 13, 1908).

MENINGITIS, TREATMENT OF.

In the treatment of continuous vomiting in protracted cases of meningitis, the writer found that the administration of hydrochloric acid was exceedingly beneficial, while the giving of morphine usually caused the vomiting to increase, as it brings about a stagnation of the gastric contents and delays the emptying of the stomach. In several cases of the infectious type of meningitis, the epidermatic employment of guaiacol brought about a diminution of the meningeal symptoms in a few days and in a short time apparently cured the disease. V. Arnold (Zentralblatt für Innere Medizin, May 9, 1908; New York Medical Journal, June 27, 1908).

MERCURY IN TUBERCULOSIS.

As the result of observation in the treatment of 422 syphilitics, of whom many were tuberculous, by intravenous injections of mercury, the writer arrives at the following conclusions:—

The control of the active syphilis in many of the tuberculous patients seemed for the time to benefit the tuberculosis also. In patients with pulmonary tuberculosis, after the first control of the syphilis and if the treatment was continuously pushed, a few months would show a gradual aggravation of the tuberculosis. The genito-urinary tuberculous patients, outside of the benefit to their syphilis, showed no improvement in their tuberculosis. Two patients with tuberculous eye trouble were benefited,

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one markedly so and the other but moderately so. This is not surprising, as the intravenous injections of mercuric chloride exert a decided and beneficial influence over infections and ulcerations of the eye. The patients with pulmonary tuberculosis, evidently suffering from the absorption of septic materials, probably due to a secondary infection, were decidedly benefited up to a certain point, after which, if the mercurial treatment was continued, their retrogression was rapid. W. F. Bernart (New York Medical Journal, June 27, 1908).

NEURASTHENIA OF AUTOINTOXICATION.

The writer considers it proved that the body does form poisons within itself; that they may be found in the urine, bile, venous blood (especially just before it gets to the liver), and in the arterial circulation itself; likewise that these poisons are taken up from the gastro-intestinal tract and are constantly in the process of being excreted by the various emunctories. In the healthy man the outgo equals the amount formed, but in the presence of pathologic conditions, especially of the intestinal canal, the latter becomes a veritable culture tube and absorption takes place. The author reports 8 cases of neurasthenia attributed to intestinal troubles and cured by corresponding measures. In these cases certain points stand out prominently: The first is a hereditary taint and neuropathic susceptibility. The second is the symptom of fear, in its various phases—so common in intestinal diseases. The third and most important, so far as treatment is concerned, is the constant condition of intestinal putrefaction that has had to be overcome before any relief was achieved; this was in many of the cases associated with insufficient elimination of urine. In cases of this kind there is often a hysterical taint engrafted on the original trouble, and this must be considered in treatment. T. J. Orbison (American Journal of Medical Sciences, April, 1908).

OIL OF TURPENTINE, INTERNAL USE OF.

The most palatable way of giving this remedy is to rub it up with almond mixture, sweeten the whole, and flavor with a little oil of cloves. Caution must be used with reference to the kidneys. Large doses are aperient, and so pass off mainly through the bowels. Small doses do not irritate the kidneys. The remedy is of value as a hæmostatic, as in purpura, and here it must be given in aperient doses. In hæmophilia, an aperient dose will often bring about a cessation of the bleeding after all other remedies have failed. Smaller doses are good for such bleedings as hæmoptysis, the melæna of typhoid, etc. For uritis in the adult, both syphilitic and rheumatic, it may be given in dram doses thrice daily. One of its most valuable uses is its internal administration in small doses as an antiseptic and sedative in cases of flatulent colic and unhealthy states of the intestinal mucous membrane. Also in hiccough it may be used in combination with spirits of nitrous ether. It is useful in the removal of hepatic concretions.

The curative value of turpentine when given by the mouth may often be supplemented and enforced by its internal use in enema. In cases of threadworms the vermicidal action of the remedy is strikingly manifested, and it has only a salutary influence upon the mucous irritation which is a constant accompaniment of ascarides if these be numerous. It has been employed, too, in cases of

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catalepsy. One ounce of the oil well mixed with a pint of thin gruel and thrown slowly into the bowel acts as an energetic stimulant to the torpid nervous system; and the injection, if followed by vigorous frictions along the spine with a strong irritating liniment, is said to be attended with very satisfactory results. In flatulent colic a terebinthinate enema, if given hot, is a welcome addition to the use of remedies by the mouth, and will often bring a severe attack to an immediate close. In the seizures of this kind which have been before referred to as common in infants, the derangement is a cause of so much suffering that nothing which tends to shorten the attack should be neglected; and the injection of a dram of the oil in five or six ounces of hot barley water thrown slowly into the bowel will often put an end to the distress and send the child into a quiet sleep. Eustace Smith (British Medical Journal, May 23, 1908).

OSTEOMALACIA, ANTITHYREOIDIN IN.

Attention is drawn to the many similar features existing in Graves's disease and osteomalacia. Starting from this premise, the writer gave a patient suffering from the latter disease injections of Moebius's antithyreoidin serum with almost magical results. Up to the present time the patient has remained well. The author says that if intravenous injections are not considered judicious, intramuscular injections of Moebius's serum or of an artificial suprarenin may be given, Meltzer having shown that the intramuscular method is equally efficacious with the intravenous. R. Hoffmann (Zentralblatt für Gynækologie, May 2, 1908; New York Medical Journal, June 27, 1908).

PROSTATIC HYPERTROPHY IN AGED.

An early operation is to be recommended before an ascending infection has occurred. When complications have arisen, and the patient is uræmic and highly septic, it is wise to adopt the two-stage operation. In this way the second operation can be deferred until the patient has improved physically and is relieved of the septic state. Catheter life is a precarious one. Continued catheterization is responsible for the loss of many lives ultimately, and should be condemned. Total and partial prostatectomy in the absence of kidney or other complication will have a very low mortality, if any. No class of surgical work has given better results and a lower mortality in the writer's hands. C. E. Bowers (American Journal of Surgery, July, 1908).

QUININE, PYRETIC PHASE IN ACTION OF.

Experimental research which corroborates the views of the Roman school in regard to the best technic for administration of quinine. If given too soon, either it has no action or the pyretic phase of the quinine influence will be superposed on that of the malaria. Given too close to the paroxysm the quinine does not have time to manifest its antipyretic action. The sensitized organism is liable to react with the febrile phase, and the febrile condition is magnified by the combination of the malarial and quinine pyresis. In the subcontinuous form, lacking the control of the thermic cycle, if quinine is given by routine it may induce continued high temperature from the thermic reaction to the quinine by the soil sensitized by the malaria. The "Roman" technic is the administration of a single dose of 1 to 2 gm. (15 to 30 grains) of the

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quinine salt a few hours before the paroxysm. S. Mircoli (Gazzetta degli Ospedali e dell e Cliniche, May 17, 1908; Journal of the American Medical Association, July 11, 1908).

SUPRARENAL HÆMORRHAGE IN AN INFANT: ITS RELATION TO HÆMOPHILIA.

The writer was in attendance at birth of a full-term male child born after a normal labor. The umbilical cord, a thick one, was tied three times in succession on account of bleeding at the seat of ligation. This was finally checked and the child did well till the ninth day, when it became weak and jaundiced. In a few days more red patches appeared on the chin and later on various bodily areas. Fever and slight convulsions came on, and the child died on the twentieth day. Autopsy revealed a dark, slate-colored left adrenal. Opened *in situ*, it collapsed at once and emptied its fluid contents into the abdomen. On examination it appeared to be converted into a blood-sac, was very soft, and partly torn in removal. There were no signs of inflammation spreading up from the umbilicus, and the umbilical cord inside the abdomen was small, pale, and evidently not diseased. The brain was not examined.

The microscopic report was as follows: The right suprarenal showed no abnormal appearances. The left suprarenal was much broken up, but there were the remains of hæmorrhage in its medullary substance, both in the form of extravasated corpuscles and as granules of pigment. The condition was probably the result of strain and not of disease.

The author says that the case is typical of hæmorrhage into the adrenal medulla, and its character was verified by the necropsy. It appears to him that its chief interest and significance depend upon those earlier evidences of failure of the vasotonic function of the medulla which has been described; the signs of a hæmophilic weakness, the general atony, the slight preliminary purpura, and increasing lassitude which culminated in the final purpuric explosion, nervous and general collapse. It appears as if there had been present at birth, or possibly before it, in the medulla, some premonitory congestion or slight hæmorrhage, followed by a sudden final apoplexy, a condition of things which finds its counterpart at the opposite extreme of life in the cerebrum. How far hæmophilia is dependent on adrenal inadequacy remains to be proved, but the present case is suggestive in this connection. There was no family history of hæmophilia. B. G. Morrison (Lancet, June 6, 1908).

SUPRARENAL INSUFFICIENCY.

Hæmorrhage of the adrenals has been generally recognized as a common pathological finding in still-born infants or those dying shortly after birth, but in none of the countries outside of France had acute insufficiency of the adrenals become a factor in medical diagnosis in advanced life as well as in infants. That a symptom complex dependent upon acute insufficiency of the adrenals does occur is well exemplified by the case reported in full. The following classification he believes will serve as a basis for clinical consideration: 1. Cases of sudden onset with epigastric pain and tenderness, vomiting, profound prostration, feebleness and rapidity of pulse, coldness of extremities, lumbar tenderness and at times diarrhœa, and abdominal distention, followed within a few

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days by death. 2. The asthenic type in which the predominant feature is a profound asthenia ending within a few days in death. 3. The nervous type, in which the predominant symptoms have been either convulsions, coma, delirium, or a typhoid state. 4. Cases of sudden death. At autopsy nothing except a destructive lesion of the adrenals, usually hæmorrhage, have been found. 5. Cases occurring in association with a purpuric eruption or hæmorrhages into the abdominal viscera. Of all the symptoms the most constant and one of the most characteristic is a greater or less degree of asthenia. R. S. Lavenson (Medical Record, June 20, 1908).

TRACHOMA, TREATMENT OF.

The writer considers that the surgical treatment of trachoma is the most effective way of combating the disease. Expression is safe and effective, shortening the duration of treatment in a marked degree. The operation can be performed under cocaine, but in severe cases and in intractable children ether and gas are preferable. Adhesions in the lids should be separated with the probe daily until the tissues of the lids have healed. The reaction caused by the operation yields readily to ice cloths applied to the lids, and the resulting traumatic conjunctivitis can be controlled in a few days with a silver salt. The after treatment is most important to attain complete cure and to prevent recurrence, and should continue some weeks. W. M. Carhart (American Journal of Surgery, June, 1908).

TOXÆMIA FROM THE STANDPOINT OF PERVERTED METABOLISM.

Toxæmia is defined by the writer as a condition characterized by the overloading of the blood with normal or abnormal products of food or tissue metabolism. It is purely endogenous and distinct from toxæmia due to exogenous products or from toxæmic states arising in the course of infectious disease. Abnormal activity of any organ may result in the overloading of the blood with products which lead to various toxæmic symptoms or may so influence the activity of other organs that abnormal results will follow. Such may be the influence of the thyroid, the ovary, the testicle, the pancreas, the suprarenal, and the hypophysis on the general functions of the body. The writer discusses intestinal, hepatic, renal, and thyroid toxæmias, and concludes that toxæmia, apart from that which follows acute or chronic bacterial processes, is always of metabolic origin. The toxæmias discussed are more the effects of a general metabolic perversion than of a direct organic disorder. R. W. Webster (American Journal of the Medical Sciences, May 1, 1908).

UTERINE CANCER.

The importance of early diagnosis is urged by the writer, and he gives some suggestions to aid in making it. A careful clinical history should be made, omitting no detail regarding menstruation, discharge or odor. An offensive odor does not begin until the tissues are breaking down. Irritable bladder is an early symptom. An investigation should be made on the occurrence of any unusual symptom during the cancer period. Cancer of the cervix, if present, will almost certainly be detected early, by examination. Cancer of the body is rare during menstrual life, and is more prevalent in women who have not borne children. The most common form is adeno-carcinoma. The progress of the disease at first is very slow. After the cessation of menstruation a watery dis-

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charge may set in; this becomes colored after a time. Backache and pain may be complained of, but the patient does not consider herself an invalid. In ten or twelve months the uterus will be enlarged. Such patients are often sent to the gynæcologist as suffering from fibroids, but fibroids do not begin after the menopause, and if the patient had a fibroid before, the history of the last few years of menstrual life would indicate it. The writer has detected malignant disease of the fundus with the curette when only a small area has been involved. Epithelioma of the body of the uterus is the rarest of growths. R. B. Hall (Lancet-Clinic, May 23, 1908).

X-RAY IN DERMATOLOGY AND X-RAY DERMATITIS.

The x-ray is an agent not to be condemned but rather to be praised. The so-called x-ray burn is no more the direct result of the x-ray than the same reaction when the part has been exposed to the ultra-violet ray, radium or similar agents, and is, therefore, entitled to the name of radio-dermatitis. The x-ray when brought into direct contact with the tissues is far more active than radium and furnishes clinically better results. There is no accurate means at present whereby the effect of the x-ray can be measured; the reaction is largely due to conditions existing within the body of the patient. The x-ray is not a cure-all, but has its indication in certain selected cases; whenever possible malignant growths should receive the benefit of radical removal by knife, cautery or paste. When for any reason these measures cannot be used, then use the x-ray, but use it with judgment. A. C. Geyser (American Journal of Surgery, May, 1908).

Announcement.

THE SAMUEL D. GROSS PRIZE—FIFTEEN HUNDRED DOLLARS.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page, it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 S. 13th St., Philadelphia," on or before January 1, 1910.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize. WILLIAM J. TAYLOR, M.D., RICHARD H. HARTE, M.D., DEFOREST WILLARD, M.D., *Trustees.*

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Clinical Lecture

ACUTE ECTHYMA.[1]

BY JOHN V. SHOEMAKER, M.D., LL.D.
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GENTLEMEN: The disease present in this young man presents lesions which are very similar to those present in other cutaneous diseases, hence a careful study of the case is valuable, especially from a viewpoint of differential diagnosis.

The patient is 29 years of age; nativity, Russia; occupation, laborer.

He complains of fatigue, anorexia, and constipation. Four days ago he developed a rise in temperature which, on disappearance, was followed by an eruption of papules, red in color, with hardened bases and a well-marked reddish areola; the papules the size of a pea and painful to the touch, and which rapidly changed into pustules, round in shape and sharply defined, as you may observe by those still present. The incrustation is due to the rupturing of the pustules. When these hard, yellowish, adherent scabs are removed the surface underneath appears ulcerated and covered with a purulent secretion.

Physical Signs.—The patient suffers from dyspnœa on exertion, and on auscultation a double mitral murmur is best heard at the apex beat. The murmur is transmitted into the left axilla, and is also heard along the sternum to the left. No other abnormal signs can be elicited, except enlarged inguinal glands and a number of punched-out velvety scars, the result of syphilitic infection ten years ago.

[1] Delivered in the Clinical Amphitheatre, Medico-Chirurgical Hospital.

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Diagnosis.—From the history of the onset, the characteristic lesions, the history of syphilitic infection ten years ago, and judging from the appearance of the man, his surroundings are not very hygienic, we can safely diagnose his trouble as that of acute ecthyma.

The disease resembles somewhat eczema pustulosum, impetigo contagiosa, and flat pustular syphiloderm. In fact, it is often confounded for one of them, but may easily be distinguished, one from the other, by a few differential points as tabulated on the blackboard. The disease runs its course in from one to three weeks, after which the scabs fall off, exposing slight spots of pigmentation or cicatrices. The pustules, during the course of the disease, appears in successive crops or persist and pass into the chronic state.

Ecthyma.	*Eczema Pustulosum.*
1. Pustules sharply defined and discrete.	1. Pustules grouped and coalesce.
2. Pustules large, round and few in numbers.	2. Pustules small and numerous.
3. Papules have a well-marked reddish areola.	3. Pustules present, have no areola.
4. Eruption preceded by fever.	4. Eruption not preceded by fever.
5. Occurs more frequently in adults.	5. Occurs more frequently in children.

Ecthyma.	*Impetigo Contagiosa.*
1. No history of contagion.	1. History of contagion.
2. Predilection for the legs.	2. Predilection for the face and arms.
3. Primarily papules followed rapidly by pustules.	3. Primarily vesicular.
4. Pustulous, are deep seated with an inflammatory areola.	4. Pustules are superficial with no areola.

Ecthyma.	*Pustular Syphiloderm.*
1. No history of recent infection.	1. History of recent infection.
2. Course rapid.	2. Course slow.
3. Lesions rough.	3. Lesions polymorphous.
4. Pustules inflammatory.	4. Pustules not inflammatory.
5. Incrustation yellowish in color.	5. Incrustation purplish-green in color.
6. Crusts solid.	6. Crusts in concentric layers.

Pathology.—The papules originate in the upper layers of the corium, and lead to the development of pustules and destruction of tissue, followed by cicatrization and pigmentation, both of which may disappear in time. When, however, the cause is due to syphilis, the resulting scar will not disappear, but will be of a soft, velvety, punched-out character.

Etiology.—This disease often occurs in "old" syphilitic patients who have not had a thorough treatment in the early stages of the disease. His having had syphilis ten years ago, I believe, is the potent etiological factor in this case. His uncleanly habits and improper hygienic surroundings are strong predisposing causes, and undoubtedly invited the disease. Among other predisposing causes are poor food, alcoholism, nephritis, diabetes, and scrofula. Upon the patient the lesions may be spread by scratching.

Treatment.—The treatment depends upon the cause of the disease. We

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will, therefore, instruct the patient to improve his hygienic surroundings, to take more exercise in the fresh air and sunlight, and to bathe freely in warm water, using plenty of good neutral soap.

It is essential also that he should receive plenty of wholesome nutritious food. Meats and vegetables, well cooked, are as necessary as medicine to restore his debilitated condition of the blood.

Medicinally, to combat and arrest the disease in this patient, and since we believe the cause to be due to syphilis, we will give him the following combination of mercury and iodine:—

℞ Hydrargyri chloridi corrosivi .....gr. ij.
Potassii iodidi .....ʒss.
Syrupi sarsaparillæ compositi .....q. s. ad fʒiij.
Misce. Signa. One teaspoonful in a glass of water two hours after each meal.

After the parts involved have been thoroughly cleansed with soap and water, the ulcers should be dressed with a 1 to 2000 solution of bichloride, after which the ulcers may be dusted freely with a powder containing equal parts of calomel and boric acid. Should the ulcers obstinately resist to this treatment, they should be lightly cauterized with either pure phenol or the lunar caustic. These caustics will stimulate the ulcers to healthy granulation and bring about a rapid cure.

Original Articles

CASES OF NEGATIVE DIAGNOSIS OF TUBERCULOSIS.

By EPHRAIM CUTTER.
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(*Continued from April issue of* THE MEDICAL BULLETIN.)

III.

Where consumption was suspected and where the rational and physical signs, including the blood inspection, negatived.

CASE 10. Mrs. L., Hyde Park, Mass., 39, was seen in June, 1877. Four years ago she noticed a lung weakness that began, what her physicians termed, congestive asthma. Cough is severe and hacking. The feeling was if she had something crawling and tickling in her larynx. Then followed spasms of the glottis; sputa tough, tenacious, stringy; sometimes streaked with blood. General health has suffered very much. Last two winters spent in Florida. Weight, 86 pounds. When she went last to Florida it was 76.

Present question raised is whether she is tuberculous or not. The physical signs presented by the exploration of the chest were those of health. The *blood also was normal.* Diagnosis thus was negative.

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The writer then attempted to ascertain if the asthma was that described by Salisbury in Halleer's *Zeitschrift,* Jena, p. 7, January, 1873, as an "infusorial asthma." Perhaps a better name would be rhizopodal asthma, in which one of the actinophrys are found in nasal, laryngeal and pulmonal secretions, on the conjunctivæ, and in urine sometimes, morphologically identical with those found in the cochituate and canal water in Nederlands.

Some of this patient's symptoms were those described as above. Accordingly her sputa was carefully examined. A copious fungus growth was found forming large and elegant skeins of mycelia, uniform in caliber, smooth, lustrous as pure gold wire coiled like a corkscrew, and embedded in gelatinous clear jelly; afterward they were found in another specimen of her sputum. Up to this time I had not heard of them in sputa. Later I found it had been described by Salisbury in the 1860's, and named *Spirilina Splendens* as one of the causes of asthma in which it is found, not always though, and sometimes in cases not asthmatic, but rarely.

In the 1887 Int. Nat. Med. Congress at Washington, the writer projected photographs of the *S. Splendens,* and was gratified later to see the announcemen that they were discovered after 1887 in Germany, and the writers call them Curshmann's (or some such name) spirals! The delight was because of the *confirmation* not of the *discovery.* It would take a bigger surgeon than ever lived to operate on Father Time, so that 1888 would precede 1860; nor can the English language be thus used. But the joy of adding to my own knowledge is enhanced by knowing that others know it also.

Case 11. In June, 1871, the writer was crossing the Mississippi at Omaha, on the Pacific Railroad steam ferry, returning from the San Francisco meeting of the American Medical Association. During the ferriage he coughed up a small orbicular granule one-eighth inch in diameter, moist, cretaceous, dense. Kept in an envelope it dried and crumbled.

In February, 1873, a like larger concretion he expectorated. An obscure feeling of rawness and slight pain was felt in the upper third of left thorax. There had been morning cough and sputum, some languor and exhaustion, and consumption being hereditary, the writer supposed that he, himself, was going into a "decline." Prof. H. I. Bowditch and others explored his chest, but could not say there was absolutely no tuberculosis, as a spot in the upper third left chest behind presented obscure diminished resonance on percussion. Nor could they pronounce that there was absolutely no disease. It was a doubtful matter. When pressed no decided opinion could be obtained from them. This uncertainty, taken in connection with the cretaceous tubercles, made the subject anxious to know what to do. If there was incipient tuberculosis, emigration was determined. If not he preferred to remain in N. E.

In this disturbed state of mind Dr. Salisbury found no evidence whatever of tuberculosis, but some evidence of cardiac trouble. Pulse usually 45 per minute. This and the blood-signs portended fatty degeneration of the cardiac muscles. He said the danger was not tuberculosis, but fatty heart; that the cretaceous tubercles were lung calculi, formed as in the gall and urinary

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bladder; that I could live in east or west, and that I should use means to have a pulse of 70, at least—the normal pulse in his opinion. He directed more animal food. This was obeyed. Since then the pulse has quickened and no tuberculosis (even to 1908) has appeared.

This bit of personal history may serve somewhat to explain the interest this writer feels in the present subject as this blood diagnosis settled his subsequent career, "Calculus of the lung" is not down in the books where it should have a place, as I once had a thyrotomy case where the trachea seemed lined with stone, and the doctor (above) said that a physician brought what he termed a piece of necrosed rib that a patient actually coughed up. On section it was found to be stone with concentric rings.

Case 12. Mr. G. O. N., 21; chemist; a quiet, impassive youth; habits regular; in August, 1876, was seized with a copious hæmorrhage from the lungs, bright red color and first of its kind. Had had some cough, slight sputa. Appetite poor, tongue coated, eyes yellowish. Very loath of any active exertions. He sought seclusion and moped about in a distressing manner. His parents brought up questions as to diagnosis, though they supposed it tuberculous all the while. No physical signs of disease were found in the chest save an enlarged area of dullness over the precordium. Heart impulse increased. Fremitus on palpation. Sounds normal. Rhythm good. There was increased dullness on percussion over the liver with tenderness. Blood free from spores, fibrin filaments, enlarged leucocytes, or debris.

Diagnosis.—No tubercle, congestion of liver, hypertrophy of heart.

Treatment.—Blue pill and comp. cathartic pills. Veratrum viride. Mixed diet.

Prognosis.—Favorable. Result, perfect recovery that lasted till March, 1878, at least.

Case 13. Prof. L. W. M., 48, in December, 1875, an active, original and progressive worker in public school music, was exposed to the vicissitudes of the weather, and contracted a cough that became chronic with copious expectoration, sore throat, hoarseness, fever, loss of appetite, and was confined at home. Chest clear on percussion, but filled with sonorous and fine crepitant râles. Evidently capillary bronchitis, but as consumption was in the family he was fearful of it. Without a blood examination it would have been impossible for the writer to have decided this troublesome question at once, as it was done.

The blood under the microscope revealed no sign of tuberculosis. It was clear and free from any morphological foreign elements.

With the nascent chloride of ammonia by inhalation and iodide of potassium he made an unusually speedy recovery.

1908. Later he did show the blood signs of the pretubercular state, of which he recovered, to die in 1896 of heart disease.

Case 14. The wife of case 13, sick in October, 1876. Ordinarily healthy though ætiolated by constant indoor life. Had mild fever with cough and expectoration. Had lost flesh and strength, and had a bad appearance generally. Great pain in lower chest. Hurt to draw in a long breath. Poor appetite. Not

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confined to bed, however. Physical exploration of the chest showed a diminished respiratory murmur and resonance on percussion at and over the site of pain. No râles heard. Evidently pleurisy, but the tubercle question arose here also. It was definitely settled by the blood not showing any signs of disease. Time has proved the correctness of this diagnosis. The dullness increased and the signs of effusion were more marked. Perfect recovery followed the use of means and nothing like tuberculosis developed to annul this judgment.

Case 15. In 1864 Gen. P., 60 years, applied for relief from a throat trouble, saying that his case was regarded by his medical attendants as consumptive. Of under size, thin, and somewhat enfeebled by a year or more of sickness, he was able to go about and travel from home, but his chronic cough and incomplete aphonia put a forbidding aspect to his prospects for cure. His case excited an extensive interest because of high position and estimable personal qualities.

Physical Signs: Throat.—Vocal bands reddened and inflamed, arytenoid cartilages thickened, pyriform fossæ ulcerated, pharynx reddened.

Chest.—Over left lower third back resonance on percussion decidedly diminished. Respiratory murmur diminished in intensity. No râles. Heart's area of dullness increased. Impulse strong. Sounds normal.

Blood showed no diseased fibrin filaments, nor spores of a tuberculous kind.

Diagnosis.—Old pleurisy. No tubercle, but fearing that there might be some mistake and bearing in mind that I had found all nasal catarrhal cases do best under the strict diet, I put him on it, though not thoroughly. Topical applications to the throat; acid baths to the skin. The chest improved so that the general was able to keep his command at the Annual State Muster. Subsequent history has confirmed this negative diagnosis.

Case 15. Mr. G., whose father and mother and two sisters died of consumption, was much excited by the experiences that had surrounded him, and was very anxious to know whether he was in any way similarly affected, although he was the picture of health. On a careful and thorough examination the chest, throat, and blood were found normal. There were no evidences of tuberculosis. This was surprising, as family tuberculosis is generally found in the blood. Salisbury. Notwithstanding this negative evidence he was advised to follow up the teachings of his noble sister's case, to eschew starch and sugar in his diet to a limit of one-third the gross amount. Although four years have lapsed nearly since this writing, he is still in good health. No sign of any trouble with his lungs.

Case 16. A few years ago a dentist, 42, was thrown out of his buggy by coming in contact with a horse-car pole. Carriage smashed, horse injured, and he struck heavily upon the lower part of the front left thorax. The ninth and tenth ribs were dislocated from their synchrondroses. There was dullness on percussion and absence of respiration at site of injury. Friction murmur. His health previously was not very good. He was a long time in

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getting well from fractured ribs and pleurisy. Hence the tubercle question raised, though not in the family. Still sad experience causes suspicion.

Physical exploration of the blood by the microscope showed no evidences of tuberculosis. None have since appeared in three years to dispute this negative evidence.

CASE 17. A mother of eight children always had a dry cough. 1875 she complained of her chest, extra cough and sputum, præcordial pain, dyspnœa, and palpitation of heart, loss of flesh and strength. There were no physical signs of lung disease, and the question was raised whether it might not be pretubercular.

An examination of the blood was instituted. No evidence of tuberculosis in that fluid. It was clear. Red discs distinct, not sticky. No fibrin filaments. No spores nor spore collects discovered.

On this negative evidence she was declared non-tuberculous. History since confirms this diagnosis.

Her ailment was uterine, as examination showed.

CASE 18. Miss P., 21, music teacher; 21 years of age in 1877, complained of pain and numbness, languor and weariness, and of a very irritable and harrassing cough. Seven years previously she fell one story through a scuttle of a warehouse, fractured the left arm and received internal injuries, the nature of which she knew not. At my interview she broached the question of tubercle. Physical examination showed the throat universally reddened, exceedingly sore and irritable; showed the chest to be normal, the blood normal, and the uterus diseased, the last accounting for the reflex hyperæsthesias and numbness, and the functionally disturbed eyes.

Thus was established the negative diagnosis of tubercle.

CASE 19. In the spring of 1876 a very large man, 30, conductor on a steam railroad, applied to the writer for relief—feared he was tuberculous. Chief symptoms were chronic cough, copious expectoration, partial sometimes complete aphonia, loss of flesh, a feeling of weakness and general malaire.

The throat was found diseased, the vocal bands, the arytenoid cartilages, posterior palatine pillars, much inflamed. No physical signs of lung disease nor of tuberculosis in the blood. Recovery followed tonics for health, topical applications for throat. The fear of tuberculosis has not again been roused, and the confidence in the diagnosis has not been shaken.

CASE 20. Miss W., 30, mother died of consumption. Herself small and very nervous. She had expressed fears lest possibly her case might be as her mother's, though her symptoms pointed to local trouble.

There were normal thoracic signs. The blood also presented clear interspaces devoid of any evidence of tubercle. Negative decision. Though considerable time has elapsed, it has confirmed this diagnosis.

Remarks.—Sometimes the mother taints her child, but not always, as the mother may not have been tuberculous until after the birth of her child. Tuberculosis may arise without being hereditary. Moreover, heredity may be pretuberculous—a taint only—and latent, needing some exciting cause to call it into action, as a spark to gunpowder.

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CASE 21. Miss J., aged 17, was ailing with a dry chronic cough. She was an overworked, high-school girl. Appetite poor and she began to languish in health. At her parents' request she was examined for tuberculosis in chest, throat, and blood. Nothing serious found. The blood was healthy. Hence the question was settled negatively. With the use of mild tonics, expectorants, and rest from school her recovery was speedy and permanent.

CASE 22. Miss H. M. S., a pale, nervous, lame maiden lady, 30, lost her mother from cancer and had an ulcerated throat. There was no physical sign of thoracic disease. Also none in the blood. Chief trouble was found to be uterine, and not tuberculous.

CASE 23. Miss F. had been pronounced tuberculous by several physicians, because she had considerable pain and distress in her chest that incapacitated her from performing her duties of an ordinary house servant.

With this diagnosis the writer was called to examine the case. No disease of blood was found. It was uterine. Cured by local treatment.

CASE 24. Widow H.'s husband died in 1872 of tuberculosis. For some time she was able by hard work to maintain her family. But there were no physical signs of disease in her lungs or blood.

GYNECOLOGY AT THE AMERICAN MEDICAL ASSOCIATION AND MEDICO-LEGAL.

BY E. S. McKEE, M.D.
CINCINNATI.

GYNECOLOGY.

CRIMINAL abortion in its broadest sense was the subject, by Dr. W. B. Dorsett, of the chairman's address before the section on "Obstetrics and Diseases of Women" at the Chicago meeting of the American Medical Association. First, he considered the criminality of the woman. In nine States she is guilty of a felony, in seven of a misdemeanor, and in thirty-five of no crime at all. Second, he considered the question what is the charge and what is the penalty for selling or offering for sale, abortifacient drugs or instruments for the prevention of conception? In twelve States this constitutes a felony and the punishment varies from imprisonment to a fine ranging from $50 to $5000. In twenty States it is a misdemeanor, and in thirty States there is no law on the subject. Third, what is the charge and penalty dependent on the age of the fœtus? In four-fifths of the States the age is immaterial. Fourth, what is the effect of the death of the woman on the charge and penalty of after the production of criminal abortion? In eighteen States the charge is murder and the penalty is death or imprisonment for life; in six States the charge is murder in the second degree and the punishment is imprisonment for life or not less than three years. Fifth, can the license of the offender be revoked after the induction of a criminal abortion? It can be revoked in fifteen States, and in thirty-two there is no law. Sixth,

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can a physician who gives subsequent treatment in a case of criminal abortion be allowed to testify, or is his information regarded as a professional secret? In only one State is he permitted to testify. The chairman called attention to the fact that the laws were insufficient or inadequate, and he advised the appointment of a committee by the House of Delegates, to be known as the Committee on Criminal Abortion, which should undertake the passage of suitable laws after having studied the condition from all points of view. Dr. Carstens, of Detroit, said that the whole thing was a matter of education. It was the duty of the medical profession to teach the moral responsibility of the meaning of life; the duty of maternity and the necessity of the love for children. Dr. A. Martin, of Griefswald, Germany, condemned criminal abortion, but said that any law passed to control it would fail. Dr. Wathen, Louisville, said that abortion was offensive to every honest doctor and every honest citizen. He considered the offense no worse for the woman than for the man who committed it, and was just as great four weeks after the conception as eight months. Dr. Helen Putnam, of Providence, had spent much time investigating the teaching of physiology and hygiene in the public schools, and incidentally had inquired into the method if any in which the question of sex was treated. She had found that those teachers who had a training in biology were doing admirable work in the teaching of the phenomena of life, and if in this manner the proper phenomena of life were taught the tendency to the production of criminal abortion would be checked. The consensus of opinion was that it was largely a matter of education.

"The Conservative Surgeon" and the "Symptomless Uterine Fibroid" was the subject discussed by Dr. Joseph B. Eastman, of Indianapolis. Complications have been shown from time to time to exist in a considerable percentage of cases of uterine fibroids which, in time, would bring about a fatal termination. The presence of these complications has been put forth as a reason for the removal of all fibroids. Emphasis was put on the fact that frequently fibroid tumors are found wherein exist conditions threatening the life of the patient, the existence of which conditions cannot be determined prior to the operation, and in some instances not till microscopic examination has been made. This he considered an additional argument for the removal of all fibroids.

"Three Methods of Entering the Abdominal Cavity" was discussed by Dr. E. P. Montgomery, of Philadelphia. He placed before the section the class of cases in which the different procedures can be employed with advantage to the patient. The vertical abdominal procedure affords the widest application.

"Length of Recumbency After Abdominal Section." Dr. C. C. Frederick, of Buffalo, thought there was a tendency to get patients up too early. He gave the following reasons for keeping the patients recumbent for two or three weeks: 1. To secure more perfect and more solid union of the abdominal incision, thus preventing post-operative hernias. 2. The majority of these patients are reduced physically and need rest. 3. Especially if nervous exhaustion is present, the conditions of the rest cure can be carried out and

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the patient got up in a better condition to proceed to normal recovery. 4. The shock to the nervous system is often severe, especially to the digestive system, requiring at least one week before the return of appetite and the normal functions of digestion.

"Ruptured Tubal Pregnancy: When to Operate?" Hunter Robb, of Cleveland, considered that the degree of danger to the patient depends upon the degree of shock, and the patient rarely, if ever, dies of hæmorrhage. Immediate operative measures to tie the arteries are, therefore, not necessary to save life and not logical, but may add greatly to the danger of increasing the shock.

"The Non-Surgical Treatment of Uterine Displacements." Dr. H. J. Boldt, of New York, because of the operating furor which has seized so many physicians, non-surgical treatment seems to have fallen into oblivion, and the new generation of physicians are not familiar with it. Many patients with displacements of the uterus are subject to operations who could be improved or cured without surgical interference.

"The Female Perineum from a Physiological Standpoint" was the subject considered by Dr. Riddle Goffe, of New York. He considered the perineum not primarily a support to the pelvic organs, assistance in parturition, and defæcation its chief functions. Accepting the evolution of man from the lower animals much light is thrown on its anatomy and functions. He compared the functions and structure of the female perineum in quadrupeds and in humans.

MEDICO-LEGAL.

Communications to Physicians Outside the State.

The Supreme Court of Colorado has recently held that the statute concerning privileged communications does not apply to physicians practicing outside of Colorado, and not authorized or licensed to practice under the laws of Colorado. The statute in Colorado reads: "A physician or surgeon duly authorized to practice his profession under the laws of the State, shall not, without the consent of his patient, be examined as to any information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient."

Physician Fined for Violating Professional Secrecy.

A Prussian physician was called to treat a young woman for syphilis. He advised her to tell the name of the man who infected her, a married teacher. The young woman lived with her sister, a midwife, with several children, and said midwife was attending the physician's wife at the time. The combination of circumstances was too much for the physician, a young one, and he felt justified in disregarding the obligation of professional secrecy. A provincial medical court of honor fined him a small sum because he had denounced to the local school inspector the married teacher who had infected the young woman. An appeal to a higher court of honor resulted in a reversal of the finding, stating that the collision of duties justified the action.

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Death from Poisonous Drugs Administered by the Unqualified.

Lord Lyndhurst, in rendering a decision where a man administered poisonous drugs to a patient suffering from small-pox which caused his death, gave the following instructions: "If, where proper medical assistance can be had, a person totally ignorant of the science of medicine takes upon himself to administer a violent and dangerous remedy to one laboring from disease, and death ensues in consequence of that dangerous remedy having been so administered, then he is guilty of manslaughter. I shall leave it to the jury to say first whether death was occasioned or accelerated by the medicines administered, and if they think it was, then I shall tell them that the prisoner was guilty of manslaughter. If they think that, in so administering the medicines, he acted either with a criminal intention or from very gross negligence." The prisoner was convicted. In another English case the judge, where a blacksmith applied corrosive sublimate to a man who was suffering with cancer, and was convicted of manslaughter, told the jury to find the prisoner guilty if they thought he took upon himself the responsibility of attending a patient suffering from cancer without being qualified for the purpose. If he used dangerous applications he was bound to use skill, and in this case the prisoner's education and employment made the use of these highly dangerous substances almost amount to a want of skill.

The Precipitin Test: Its Value in Forensic Practice Shown by Numerous Cases.

Uhlenhuth ("Das Biologische Verfahren zur Erkennung und Unterscheidung von Menschen und Thier Blut," Jena, 1905) reports a number of remarkable cases, of which the following are those of special interest:—

1. A man was accused of having stolen some fowls. Some blood stains on his clothes were, he alleged, due to rabbits' blood. Microscopic examination showed that the stains were due to the blood of a bird, and when their extract was treated with anti-fowl rabbit serum a distinct precipitate was at once obtained, while this anti-serum produced only a slight turbidity after some time in solutions of the bloods of birds other than the domestic fowl.

2. A man was accused of having shot and killed a wagoner. He alleged that the blood on his clothing was due to the dripping from some meat. The pricipitin test gave a positive result for human blood alone.

3. A woman was accused of having cut out the umbilical cord of her child with the scissors, and then having drowned the child. She claimed that the birth had occurred at stool, the cord was rent asunder, and that the stains on the scissors were due first to her having cut some plums and then cut off the head of a pigeon. Autopsy demonstrated that the infant's cord had been cut and the stains on the scissors were found to be on extraction to give a precipitate with anti-human blood.

4. A man had entered a claim for sick benefit, having been found lying in bed, the clothes soaked in blood. He claimed to have had an attack of hæmorrhage during the night, but the precipitin test showed that the blood

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on the bed clothes was bovine, and he confessed that he had emptied a bottle full of ox blood on the bedclothes.

5. Sachs (Royal Institute for Experimental Therapeutics, Frankfort on the Main) found a man lying in a pool of blood with twenty stab wounds in his chest which he said were inflicted by a butcher. The butcher on being questioned, said that some stains that were found on his coat and trousers and one of his boots were due to the blood of a cow and a pig, which he had recently slaughtered. The extracts of the stains gave a positive reaction for pigs' blood and a negative reaction for human and bovine blood. The scrapings from under the man's finger nails, which were sent for examination, were found to give a negative reaction for all three bloods.

6. Kochel (Institute of Legal Medicine University of Leipzig): A man claimed as the result of accident to be suffering from a hæmorrhage from the urinary tract. The precipitin test gave a positive reaction for pigs' blood, and it was found that he was pouring pigs' blood into his urine from a phial.

7. Zeumer (*Zeitschrift für Mediz,* Beampte, 1902, p. 829) reports the case where a house was burned and a small piece of charred bone was found. A solution was made, filtered, and the clear filtrite tested with human, anti-pig, and anti-ox sera, the reaction being positive for the last-named anti-serum only.

AMERICAN PROCTOLOGIC SOCIETY ABSTRACTS.

REPORTED BY LEWIS H. ADLER, M.D.,
PHILADELPHIA.

PRESIDENT'S ADDRESS.—The president, Dr. A. Bennett Cooke, of Nashville, Tenn., after briefly reviewing the organization and early history of the society, stated that there has probably never been a medical organization composed of a membership drawn from such widely separated localities and so restricted as to number, which can show a similar steady and unbroken record of growth, enthusiasm, and interest, increasing with each succeeding meeting. The fidelity and devotion of the individual members was in the beginning, and has remained the society's distinctive characteristic.

He then proceeded to trace some of the results which had been accomplished in the ten years of the society's existence, chief among which was emphasized the assured position as a legitimate, dignified, and important specialty which is now universally accorded to proctology. "Ten years ago special instruction in this branch, with a few exceptions, was only to be had in the post-graduate institutions of the larger centers. To-day the curriculum of any medical college which does not include a course on proctology is rightly considered to that extent defective and behind the times. The benefit of this new order of things, to the public, cannot be estimated. At the present time the average patient requires something more of the man who is to be entrusted with his case than the title of "M.D.," and as a direct consequence instances of incorrect diagnosis and misdirected treatment have become notably fewer."

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The objects of the society as defined in its constitution are the acquiring and dissemination of knowledge relating to this special field. The speaker inquired if the society was living up to the full measure of its possibilities in regard to the second object, *i.e.*, the dissemination of knowledge, arguing that such was not the case. As the means of correcting this defect, he suggested:—

1. That an official organ be adopted or established and a full report of the scientific proceedings of each meeting published.

2. That the possibility and advisability of becoming a section of the A. M. A. be seriously considered. The advantage and disadvantages of the latter suggestion were fully discussed, the opinion being expressed that what the society would lose in independence and individuality would be more than gained in the wider sphere of influence and usefulness opened up by this more liberal policy.

The real question is not what we as individuals prefer, but what course would most certainly conduce to the advancement of the highest purposes of our organization? For after all we must remember that we are physicians before we are specialists, and that our most imperative duty has reference to the interests of our profession as a whole and to the welfare of humanity, for which alone it exists.

"The Treatment of Choice of Stricture of the Rectum" was the title of a paper by Wm. M. Beach, A.M., M.D., of Pittsburg, Pa., who stated that in his early proctologic experience he became an enthusiast on this or that method of treatment, only to be disappointed by a recurrence of the ailment. All the classical recommendations were tried, namely gradual dilatation, proctotomy internal and external, excision, and a few other technical schemes, ideal but not practical. Each promised favorable results for a time, but experience taught him that instead of cure the condition uniformly became worse.

In order to answer the query, what is the choice of treatment, it is important to consider first the history of syphilitic stricture, and second, the location and form of stricture, to determine the degree of obstipation; third, the effect of a rectal stricture is to induce obstipation and extreme dilatation of the colon. Moreover, immediately above the various constrictions are found the active ulcerations, the source of profuse discharges of pus, blood, and mucus. Among other symptoms may be found colicky pains in abdomen: distention of abdomen, backache, aching down the legs, loss of flesh, and, withal, a general anxiety and neurasthenia.

Regarding the treatment, it is apparent that if the disease was seen early much could be done to avoid disastrous consequences; but as the disease is so insidious in onset and development by virtue of the fact that the trouble is usually located in a painless area, and that nothing short of obstipation drives the patient to seek advice, it is obvious that palliative treatment only increases the irritation and produces a greater degree of stricture. For this reason the injection of fluids is needed only for cleansing purposes and such procedures as gradual dilatation by the passage of bougies, forcible divulsion, proctotomy, and even excision are only temporary.

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For these reasons the author concludes that a permanent colostomy is the preferable plan, as this procedure admits of direct irrigation of the rectal cavity. The administration of strontium iodide in ascending doses, for interrupted periods, the writer believes is of extreme value, but he states that he has never been able to destroy the syphiloma with its use.

Irrigation should be used daily for the first month, and less frequently thereafter. For this purpose normal solutions should be used of salines alternating with solutions of 1 to 1000 permanganate of potash, or nitrate of silver, twenty grains to the quart, or of ichthyol, a drachm to the quart. Boracic acid solutions are often beneficial.

Defæcation through a properly constructed inguinal anus is complete, painless, and under reasonable control. The patient soon becomes reconciliated to his condition and rapidly improves in health.

The author, from his experience, concludes his paper, with the following remarks:—

1. Syphilitic stricture of the rectum is believed to be the result of badly-treated cases of syphilis in the early stages.

2. It is more frequently found in the female, for the reason that the primary lesions are more apt to be overlooked.

3. Direct surgical attack of rectal syphiloma does not insure permanent relief, but rather aggravates the condition.

4. Specific constitutional treatment should be instituted, with the hope of making a favorable impression upon the diseased tissue.

5. Permanent colostomy is the treatment of choice for the purpose of irrigation and restoration of bowel functions.

"Amœbiasis: Its Symptomatology, Diagnosis, Sequelæ, and the Use of Formalin and Copper Phenol Sulphonate in the Treatment," by Dr. John L. Jelks, Memphis, Tenn., who called attention to the great prevalence of this disease in the South. Marked differences have been ascribed to the amœba as to its character and actions in different cases, especially with reference to their phagocytic properties and their motility. The author referred to associated infection as playing an important rôle in many cases, and attributes to this mixed infection the difference in character of ulceration in the higher parts of the colon, and that in the rectum.

Cases of amœbiasis are referred to as occurring in nests, in the low, marshy districts, in the sparsely settled alluvial sections, and in the suburban mill districts of the city. None of the cases in the city were residents of the highland portion, and all of them partook of fresh vegetables, which were grown in the bottom and washed with water from shallow wells.

The author viewed with suspicion all cases of violent acute dysentery or chronic diarrhœa with mucus discharge. The author stated with emphasis that he has not found the symptoms of dysentery and diarrhœa, essentials to the existence of amœbiasis; on the other hand, he has encountered cases in which constipation or obstipation was complained of, and he called special attention to this statement as being contrary to the generally accepted theory.

In the majority of cases, however, he stated that the patient complains of,

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and the predominant symptom in chronic cases is, that of recurring diarrhœa, which has existed for several months or years, associated with a quantity of mucus, which latter is occasionally blood-stained.

The symptoms in malignant acute cases, the author recited, are quite severe from the onset, the patient suffering great exhaustion from numerous movements and the septic condition which soon ensues. Sometimes large casts of mucosa are expelled, as also casts of mucus and fibrin. These latter are most fatal and should they recover from the acute symptoms, very often lapse into a sub-acute or chronic condition which may last for years, with periods of abatement and exacerbation of symptoms.

The author reviewed the symptomatology and then stated that a diagnosis might be overlooked without the aid of the microscope which, if put into more general use by clinicians in the South, especially would reveal many heretofore unsuspected cases as of this origin.

In reciting the sequelæ and gross intestinal pathology in a series of 25 cases, the author referred to many features, and stated that in two recently treated cases, small openings or ulcers extended into extensive submucus abscesses.

Often the intestinal mucosa presents only slight ulceration, or a general red granular, or perhaps œdematous, appearance, and though these are amœbic, a mixed infection is thought accountable for certain phases of this process, for, as the author explained, the amœbæ prefer the juicy sub-epithelial structures, and the pathology is chiefly sub-epithelial. The colon bacilli and streptococci are accorded importance in part of the inflammatory process, especially in the rectum. Thus is explained the great difference in the character of the ulcers found there and those seen in the higher portions of the colon.

Autopsy in one case showed marked strictures and thickening of rectal wall while in the splenic flexure, which was the seat of fatal perforative ulceration, the ulcers were sharp cut, round, and oval, seen through a thin gut with only lightly adherent omentum covering the perforated intestine.

Periods of exacerbation and abatement of symptoms in these chronic cases are thought due to several causes, chiefly the difference in activity and virulence of different generations of this protozoa. Certain differences exist, also, in activity in sporulation and in the process of incistation.

In the 25 cases cited by the author, he noted four cases in which infection in the liver was diagnosed, two of which were verified by operation; five cases of stenosis, more or less marked; two cases of valvular stenosis; two perforations, one of which was verified by autopsy; one case in which casts of mucosa were expelled; one case from which seven adenomata were removed from the upper rectum; in three cases jaundice was marked; three cases had hæmorrhoids, and one case had rectal abscess and fistula; one case suffered an impaction in the sigmoid, the size of a fœtal head, the result of stenosis below and thinning of the musculosa above; one case had infected gall-bladder which required drainage; in four cases appendiceal involvement was diagnosed; in one case in which appendicostomy was performed, adhesions were found, the result of an attack since the dysentery was established, and

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in this case great thickening of the peritoneum and a tubercular family history afforded reason for suspecting in this case a tubercular complication. However, Lewis' law could not be verified.

In the treatment, the author first referred to the importance of selecting a proper diet for these cases, and then referred to the use of formalin and boracic acid solution, and formalin and copper phenol-sulphonate solution in high irrigations through a recurrent tube which he has devised specially for that purpose. He also referred to treatments through the sigmoidoscope with silver nitrate, followed by the installation of boracic acid and aristol, or iodoform and bismuth subnitrate and olive oil.

The author concluded that the washing away of necrotic material and debris, as also the infecting agents, is an important matter in the treatment of these cases, and stated that these stimulate the vasomotor supply, relieve passive congestion and stasis, increase the amount of fresh blood to the inflamed structures, and perhaps aid in the development of antitoxic bodies.

"Some Recent Contributions to the Physiology of the Rectum," by Dr. Samuel T. Earle, Jr., of Baltimore, Md., who stated that the properties of the external sphincter resemble those of plain muscle; that the anus closes by permanent tonus of the two sphincters independent of the will, but is supplemented by it for voluntary control; that the tonus practically disappears after section of the nervi erigentes, proving thereby that the closure depends upon the constant expenditure of nervous energy, and not upon the elasticity of the muscle and the arrangement of its fibers.

That there are constrictor and dilator fibers to the internal sphincter which can be stimulated reflexly through the spinal cord, proving a reflex center in the lower portion of the cord; that through this center, either reflexly or voluntarily, the internal sphincter can be dilated or constricted and the external sphincter can be inhibited.

Report of a case: "Plate with False Teeth in Sigmoid," by Dr. Samuel T. Earle, Jr., of Baltimore, Md. Mrs. F. H. D., the latter part of August, 1907, while eating ham, swallowed a plate with two false teeth. Ten days later she had a violent attack of pain in the abdomen, followed by a chill and fever; there was no recurrence of this for one and a half months. Since then the pains have recurred from time to time, but not as severe, nor have they been attended with chill and fever. A skiagraph taken of the lower abdominal and pelvic regions showed the plate in the sigmoid flexure of the colon, on a level with the promontory of the sacrum. Examination through the sigmoidoscope brought them into view at the point shown by the x-ray. There was considerable tenesmus, and the passage of a good deal of mucus; also a tendency to constipation. Under the influence of two hypodermics of morphine, gr. $\frac{1}{4}$; hyoscin hydrobromate, gr. $\frac{1}{100}$, and cactina, which produced satisfactory anæsthesia, Dr. Earle was able to grasp the plate, through the sigmoidoscope, with a pair of long alligator forces, and withdraw it immediately behind the sigmoidoscope.

"Galvanic Electricity in the Treatment of Hæmorrhoids, Fissure, Prolapse, Ulceration, and Non-Malignant Stricture of the

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RECTUM," by Dr. Wm. L. Dickinson, Saginaw, Mich., who stated that he did not claim that this is par excellence the treatment for each and every case of hæmorrhoids, fissure, prolapse, ulceration, and non-malignant stricture of the rectum, but that in suitable cases, and also where from fear, physical conditions, or other reasons, the patient refuses to submit to surgical measures, the method had proven its utility.

In the use of galvanism sight should not be lost of the different properties of the two poles, remembering that we always have physical and therapeutical properties peculiar to each pole, and exactly opposite in effect. The positive pole produces oxygen, is acid, hæmostatic, sedative, contracts and hardens tissue, is an acid caustic, and produces hard, firm cicatrices; is also a vasoconstrictor. While the negative pole produces hydrogen, is alkaline, dilates blood-vessels, thus increases bleeding, causes hypersensitiveness, liquefies and disintegrates tissues; being an alkaline caustic, the resulting cicatrices are soft and yielding; it is also a vasodilator.

Internal hæmorrhoids are successfully treated with the electric needle, as follows: Cocainize the hæmorrhoid, then introduce a platinum or common cambric needle into it, attached to the positive pole, while the negative pole is connected with a large abdominal pad. Use a current strength of fifteen mille-amperes for fifteen or twenty minutes, or until the hæmorrhoid is rendered hard and unyielding. Best to treat one hæmorrhoid at a time.

Anal fissure should be cocainized, then a copper probe attached to the positive pole should be applied until a pronounced deposit of the oxychloride of copper salt is obtained. There will be considerable soreness for a few days, but the patient is always greatly benefited by the first treatment, if not cured by it, and is always cured by five or six treatments.

Where the edges of a fissure are greatly hypertrophied the negative pole should be applied to cause liquefaction of the dense tissues.

In cases of prolapse where the redundancy of the rectal wall is of moderate degree, galvanism is of marked benefit; an electrode attached to the positive pole should be introduced into the rectum, and a current of fifteen to twenty-five mille-amperes used daily for ten or fifteen minutes. Stricture of the rectum is successfully treated by the same method as urethral strictures, viz.: pass an olive-pointed electrode, one or two sizes larger than the caliber of the stricture down to and gently pressing against the stricture; this electrode should be connected with the negative pole, and a current of ten to twenty mille-amperes used, until the tissue is softened and relaxes, allowing the instrument to pass. Treatments should be given every five or six days, using a larger bougie each time.

When there are several small ulcers in the rectum, the rectal pouch should be filled with normal saline solution, then introduce a long copper electrode, attached to the positive pole, using a current of twenty-five or thirty mille-amperes, continuing the treatment until the effects of the oxychloride of copper is obtained.

Where the ulcers are large and deep, the better method is to treat each

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one individually with the zinc-mercuric cataphoresis, using olive-pointed electrodes, and a current of twenty to thirty mille-amperes.

"DYSENTERY," by Dr. J. M. Mathews, Louisville, Ky., who reported a case of amœbic dysentery in a man 45 years of age, who had never been farther south than Louisville, Ky. He had been treated for ten years for a diarrhœa which entirely disappeared at times, but in the course of a few months it would reappear. A proctoscopic examination was made and an ulcerated condition of the entire rectum and lower half of sigmoid was observed. A number of the ulcers were curetted and a microscopic examination made. No amœba were present. Ulcers were all healed and patient well in three and a half months. In about ten months patient returned to the office and was found to be in about the same condition as before. Another scraping was done and a microscopic examination made. Numerous amœba were present.

Patient being a wholesale fruit dealer, had handled and eaten raw tropical fruits for more than twenty years. There is no doubt about his infection occurring in this way.

Report of second case: A boy, ten years of age, with a good family history. He had so-called dysentery for two years. Had, of course, been treated for the same during this time. He was thin and anæmic, had temperature every afternoon from 99 to 101. Pulse rate correspondingly increased. Had from five to fifteen actions every day. He was placed in the Hanes (inverted position) and examined with the sigmoidscope. There seemed to be an abrasion of the superficial protective epithelial cells along the lower extremity of the sigmoid and rectum. When a pledget of cotton was rubbed over the mucous surface it would be very slightly stained with blood. No other pathology could be made out.

Patient was put in bed and was not allowed to get up except on the commode. He was given concentrated liquid and semi-solid food. The bowel irrigated every morning with normal saline solution, and in the afternoon a local application of argyrol or ichthyol was made.

He remained in the infirmary four weeks and, at the expiration of which time he was entirely free from diarrhœa, with an increase in weight of twelve pounds. One month later he had gained eight pounds.

While such as these are referred to as cases of dysentery, they are types of diarrhœa due to more or less fermentation in the upper bowel, and also the sensitive condition of the mucous membrane, above referred to, in the lower bowel.

Report of third case: A man, 42 years of age, who had an intense diarrhœa for three years. It came on in the month of July after a day of hard manual labor. Weather was very warm and he had eaten quite freely of fresh vegetables. Attack was sudden and the diarrhœa was preceded and accompanied by much abdominal pain. Actions from ten to fifteen each day. During his two years' illness he would improve under the influence of diet and rest, but did not feel at all well at any time.

When he first came to the office he showed every external evidence of

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being in the latter stages of malignant disease. We had him assume the inverted posture, and the examination at once revealed a dozen or more small ulcers along the upper rectum and lower sigmoid.

He was put in bed and given rich concentrated food. Irrigations and local applications were made to the ulcers every day. He was sent home in five weeks and had gained fifteen pounds, and was well.

In this case, as in the case just previously reported, there was no specific cause that could be made out. The disease in both cases yielded easily to treatment. In the first case it was proven to be amœbic dysentery; in the second and third cases they were types of diarrhœa, or so-called dysentery of a non-specific origin, so far as we are now able to determine. I doubt not that in the future many of the more simple forms of intestinal disturbances will be proven to have their specific causes.

Position for examination, treatment, etc. About three years ago Dr. Mathew's partner, Dr. G. S. Hanes, in treating a difficult case, discovered a position that has been employed ever since where the proctoscope is used. The patient is placed in an absolute inverted position, hanging over the edge of a table or chair on the thighs, with one shoulder supported on a chair of sufficient height. The opposite hand is supported upon the floor, or two chairs can be used, one for each shoulder, the head passing down between them.

A special table for this position is in course of construction.

When the patient is in this position the entire weight of the abdominal viscera falls upon the diaphragm which pulls upon the sigmoid and rectum, and brings them more nearly in the direction of a straight line. Atmospheric pressure completely distends the rectum and lower portion of sigmoid in most cases. A complete view of these parts can be had by the use of a reflected light. The discomfort to the patient of distending the bowel by forcing air into it is never necessary except in high examinations. The surgeon is in a comfortable position, standing by the patient, and looking down into the bowel. An enema can be given easily in this position, and you know the solution passes up into the sigmoid and colon. It affords many advantages over other positions.

A RAPID METHOD OF TEST-MEAL REMOVAL, LAVAGE AND INFLATION.

By FRANCIS ASHLEY FAUGHT, M.D.

Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College and Hospital, Philadelphia.

This improved method cannot fail to be appreciated by those who have had any experience with the ordinary gastric tube now in vogue, while by those few who have already had opportunity of using this device with uniform success in both hospital and private practice, its great superiority is amply proven.

The adoption of this method at once does away with all the uncertainty

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and uncleanliness of the present method, while it greatly reduces the patient's discomfort by materially shortening the time required to complete the procedures. Last, but none the less important, this combination allows the operator to dispense with the service of an assistant, at the same time being able, not only to remove a test-meal, but also to outline the stomach by inflation and to follow this by thorough irrigation, closing the séance if desired by introducing a definite quantity of medicinal solution.

Briefly described this apparatus and the technic of its employment is as follows: The two bottles which are graduated in centimeters are placed upon a convenient table and one filled exactly to the 500 cubic centimeter mark with warm sterile water. The double perforated stopper is fitted with the valve in one hole and a section of large diameter glass tubing is made to extend through the other opening to reach to the bottom of the bottle. This stopper, and its attachments, is placed firmly in the mouth of the empty bottle.

The two horizontal arms of the valve are connected by means of short sections of rubber tubing with the two ends of the double action Davidson bulb. The gastric tube, which should be extra long and of large caliber (½ to ⅝ inch), is connected to the projecting end of the glass tube. Before passing the tube, test the position of the valve and set it to make negative pressure with in the bottle. These preliminaries completed, the gastric tube is inserted and carried in until the mark upon the tube approaches the incisor teeth. Now, holding the tube in place with one hand a few rapid pressures are made upon the bulb. This will usually cause the gastric contents to flow into the bottle. During the procedure should sudden stoppage of the flow occur before sufficient material has been recovered, this obstruction may be readily overcome by momentary reversal of the valve, this followed by one or two pressures on the bulb will drive out the obstruction. Now, returning the valve to its original position, the removal may proceed.

In the event of failure to obtain a specimen by this means, then the addition of a quantity of water to the contents of the stomach becomes necessary to accomplish our end. For this purpose the stopper with its attachments is transferred to the bottle containing the 500 cubic centimeters of water, when the valve is set for compression, and about 400 cubic centimeters of this water gradually run into the stomach. The valve is then reversed and by continued manipulation of the bulb all material possible is removed from the stomach. It is essential for quantitative computations that at the end of this effort more than 500 cubic centimeters be recovered.

This apparatus affords a very ready and accurate method of outlining the stomach. This may be accomplished in the following way: Put the stopper with its connections into the empty bottle, then with the patient in the recombent posture the stomach is carefully outlined by auscultatory percussion, and the finding marked upon the skin with a dermographic pencil. The percussion note is then altered by the introduction of a small amount of air from the bulb, and the outline again determined and compared with the first marking. An accurate check may be maintained by altering the percussion note at will by alternately removing and returning a small quantity of air. If care is

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observed there is no danger of altering the relation of the stomach, either as regards its form or its relation to the adjacent viscera.

5231 Baltimore Avenue, Philadelphia.

Editorials

ETIOLOGY OF PULMONARY TUBERCULOSIS.

Sir Henry Whitla, senior physician to the Royal Victoria Hospital, and professor of materia medica, Queen's College, Belfast, in delivering the Cavendish lecture before the West London Medico-Chirurgical Society, selected the above live subject. The lecture is a monumental contribution to the subject, and appeared in the British Medical Journal, July 11, 1908. He first discusses freely the opinions and experiments done by such authorities as Koch, Kleneke, Villemin, Klebs, Smith, and many others, as regards the identity of the human and bovine tuberculosis. Morphologically, he states that the bovine type of organism is shorter, thicker, and more frequently irregular in its outline, and takes the usual stain in a less uniform manner than the more delicate, slender, and often bent human bacillus. He mentions such authorities as Hamilton, Young, de Jong, Gratia and Dorset, who affirm that the morphological difference can be made to disappear under certain variations in the environment of each type, thus basing little value on the morphological difference.

In considering the pathogenetical differences he states that, among the many experimentalists who selected the rabbit as the test animal, it is almost unanimously agreed that the human bacillus is less virulent for this animal and does not act as rapidly nor as extensively as does the bovine bacillus. The same is true of the guinea pig and swine which is probably most susceptible to the human type.

The goats are less susceptible; however, kids fed on the milk of mothers whose teats had been injected by human tubercle, died in three and a half months, and the autopsy revealed marked enlargement of the mesenteric glands; but the lungs and other viscera were free from disease.

The ox, however, is the least susceptible to the human bacillus, and, since 1901, when the great Professor Koch, at the London Congress, stated that the human bacillus was incapable of producing tuberculosis in the ox, and that the bovine type was practically incapable of transmission to man, innumerable experiments were made by many of the other high authorities to either prove the truth or fallacy of this statement.

It has since, experimentally, been proven conclusively, that man can be infected by the bovine type, and the ox by the human type, although no general infection will take place in the ox by only an ordinary dose of the human type.

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The most important part of the lecture deals with the different routes by which the tubercle bacillus has been detected in its entry into the human body. The series of experiments, conducted by Sir William Whitla and Professor Symmers, proved conclusively that tubercle bacilli introduced into the system by way of the alimentary canal, like pieces of carbon granules, will soon find their way into the lungs by way of the thoracic duct. The precise way in which the experiments were conducted leads us to believe that the infection of pulmonary tuberculosis more often takes place by way of the alimentary canal than by the respiratory tract. Moreover, the experiments also showed that in young animals the mesenteric glands were more frequently infected than in the full-grown, where invariably lesions were found in the lungs. These experiments afford good evidence of what has been observed clinically, that pulmonary tuberculosis is more common in adults, and that abdominal tuberculosis is more frequent in children.

If pulmonary tuberculosis can be so easily produced by way of the alimentary route in animals, why cannot the same be true in man?

Whitla refers to two outbreaks of tuberculosis which occurred under his own notice in an isolated rural community—charity school children, most of whom had been residents for several years in the institution. Within a period of a few months fifteen previously healthy girls showed a general enlargement of the lymphatic cervical glands which steadily increased and assumed the typical characters of an indolent tuberculous adenitis. There was no reason to attribute the adenitis to any local teeth or throat trouble. One child developed a subacute general peritonitis followed by ascites with enlargement of some of the mesenteric glands. The diet of the students consisted largely of uncooked milk, and the infection pointed clearly to the milk supply as the source. The six apparently healthy cows belonging to the institution were examined by the aid of the tuberculin reaction. Four of the six responded to the reaction and were found to be decidedly tuberculous, though the udder of only one cow was affected. Upon an entire change of milk supply with sterilization no further cases developed, and those affected recovered by the open-air treatment. Undoubtedly this was an infection of the bovine type in the human tissues, which gained its entrance into the body by way of the alimentary canal.

In fact, the lecture with the numerous experiments described, again sound the note of warning that all milk and foodstuffs should be strictly guarded against tubercle contamination.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

RECENT graduates of medicine will do well to get into the Government services. The opportunities for promotion are very good, and an aggressive man while on active service can find ample time for experimental and research work. Many of the army and navy medical officers have gained national and international reputation for their research work while on active service.

Examinations for admission are held from time to time throughout the

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United States. We append here, for the convenience of those who might wish to avail themselves of the opportunity, an announcement from the Bureau of Public Health and Marine-Hospital Service:—

A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street SE., Washington, D. C., Monday, September 14, 1908, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade.

Assistant surgeons receive $1600, passed assistant surgeons $2000, and surgeons $2500 a year. Officers are entitled to furnished quarters for themselves and their families, or, at stations where quarters cannot be provided, they receive commutation at the rate of thirty, forty, and fifty dollars a month, according to grade.

All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

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Materia Medica and Therapeutics

ALMATEIN IN ULCERS AND WOUNDS.

Venus (Zentralblatt für Chirurgie, No. 17, 1898) states that an extensive trial of almatein in surgical practice has convinced him that this is an excellent application to open wounds and ulcers. Almatein, first described by Lepetit of Milan as a dyeing agent, produced by the action of formaldehyde on hæmotoxylin, and used as a substitute for logwood decoction, is a fine scarlet powder without smell or taste, which is readily soluble in glycerine and in alkaline solutions. The author has applied this agent unmixed and in the form of powder to both fresh and infected wounds, and to boils, whitlows, abscesses, suppurating glands, ulcers of the legs, and to acute weeping eczema. He reports that it possesses all the advantages of iodoform and, moreover, is quite free from smell. In 500 cases in which it was used by the author no signs were observed either of local inflammatory irritation or of general poisoning. It has remarkable efficacy in cleansing the surface of an infected wound, and of promoting healthy granulation. In control experiments on the subjects of multiple unclean and infected wounds it was often found that the open surfaces treated by almatein put on a healthy aspect, and granulated sooner than those treated by iodoform or xeroform. The best results of the use of almatein were observed in the treatment of burns. In fresh lesions of this kind when the vesicles have been opened with aseptic precautions, and as much as possible of the burnt skin removed, the author covers the raw surface with a thick layer of the red powder, and protects the injured region by a dry dressing, the whole being allowed to remain for a few days. At the first change of dressing the good effects of the almatein will be demonstrated by separation of the remaining portions of destroyed skin, and by a growing layer of epidermis along the margin of the open surface. Suppuration soon ceases and the wound is speedily covered by scar tissue. The author in his concluding remarks strongly recommends the use of almatein in the treatment of open wounds and ulcers, and asserts that while possessing all the good qualities of iodoform, it is preferable to this powder in being inodorous and free from any toxic properties. (British Medical, June 20, 1908.)

BLOOD-CULTURE DIAGNOSIS IN TYPHOID FEVER.

Drs. Maybee and Taft, in writing on this subject, claim that blood-cultures in early cases of typhoid fever (that is, within the first week) give an accurate diagnosis in from 90 to 100 per cent. of the cases. The information obtained in this way is, therefore, extremely valuble, because the Widal reaction is rarely obtained before the ninth or tenth day of the disease. The simplicity of the method of obtaining blood from the ear for blood-cultures warrants its general use by practitioners. In early cases 1 cubic centimeter of blood is sufficient for each culture. In cases of two and three weeks' duration a larger quantity of blood gives a higher percentage of positive cultures. In febrile conditions

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of a few days' duration with symptoms simulating typhoid fever a negative blood-culture probably excludes typhoid fever. In septicæmia due to the *Staphylococcus pyogenes aureus,* it is possible to recover this organism from the blood by the ear method with the use of ox-bile as a culture medium. (Boston Medical and Surgical Journal, June 4, 1908.)

CASTOR OIL IN APPENDICITIS.

Dr. E. Sonnenburg, in obscure appendicitis, depends on the leucocytes to distinguish an acute inflammation of the appendix from colics of various kinds, typhoid, and other conditions. In many cases there will be symptoms of appendicitis when only an enteritis is present. It is here that a dose of castor oil is indicated, for if the symptoms do not disappear when the bowels are evacuated, the patient should be operated upon immediately. All other symptoms must of course be considered and the leucocytes should always be counted. The oil should only be given where the clinical diagnosis is simple or catarrhal appendicitis. The author has treated 111 cases by this method, and operation was necessary in only four. (Therap. d. Gegenwort, Feb, 1908).

CAULOPHYLLUM: ITS TRUE ACTION.

Dr. Eli G. Jones, in discussing this drug, claims that 10 drops of the tincture caulophyllum once an hour in a little water is one of our best remedies for hiccough. In chorea of young girls from irregular periods it is the remedy, and it should be given in the third decimal trituration—two grains once in three hours. In young girls, when the menses do not appear and they are restless, have headache, cold hands and feet, and are cross and irritable, the blue cohosh is the remedy in the form of leontin (Lloyd), fifteen drops in a little water once in three hours. It has never failed me in such cases.

For the prevention of premature labor there is no remedy that can compare with caulophyllum. In such cases it is best to use the first decimal dilution of the tincture as it is more agreeable to the patient—five drops once in two hours.

In delayed labor with rigid os and spasmodic pains, the patient worn out with fatigue, give ten drops of the tincture caulophyllum once in a half-hour.

It is better adapted to chronic rheumatism than cimicifuga, the latter being better for the acute form. In dysmenorrhœa (rheumatic), or when the pains are irregular and spasmodic like labor pains, and the sufferer screams aloud with the severe pain, and in hæmorrhage after confinement with pain from back to pubes, caulophyllum is indicated. In such cases ten drops of the tincture caulophyllum should be given half-hour. It will "cause firm contractions and arrest the flooding."

In after pains it is a reliable remedy and should be given the first decimal dilution, a teaspoonful in a cup of water, teaspoonful given every half-hour.

In rheumatism of the wrist and fingers it is the best remedy that we have, especially where the pains are worse at night.

It is a remedy that should be studied carefully, and if given when indicated is a remedy to be depended upon. (Eclectic Medical Journal, July, 1908.)

GAMBOGE.

Gamboge is a very strong cathartic, resembling elaterium only less active.

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It stimulates the muscular coat of the intestine, causing active peristalsis, and increases the secretion of the intestinal glands, but does not increase the amount of bile. The movements caused by it are large, soft, and watery, and if the dose is large or not modified by some accompanying drug, there is considerable pain and griping, and there may be vomiting. Although it acts principally locally, and, therefore, is mostly excreted by the bowel, some of it is absorbed and acts as a diuretic, and it may at times render the urine yellow. On account of the griping that it causes it is rarely used alone, but is combined with other cathartics. The only official use that it has is as a part of the compound cathartic pill, each of these pills containing 0.015 gram (¼ grain).

Though gamboge has been used in cardiac dropsy, as an anthelmintic and as an active cathartic, there is no good reason why it should ever be used or should be made official. All that it can do medicinally can be done better by elaterium. (Journal of the American Medical Association, June 20, 1908.)

GLYCERIN AND UREA IN GOUTY DIATHESIS.

Dr. G. Rosenfield, in the Medizinische Klinik, May 24, 1908, writes of his researches and experience, and claims that an increase of sugar to a diet containing purin promotes the elimination of uric acid. He suggests that tests of metabolism be made, so that the diet may be regulated according to the findings. Medicinally, he advocates the continuous use of urea. It limits the production of uric acid, he declares, and keeps the uric acid in the urine well dissolved. If the patient urinates in a cone of filtering paper the paper will be covered with granules of uric acid in extreme cases, but if these patients are taking daily from 10 to 15 gm. (150 to 225 grains) of urea the filter will be free from crystals. In one case the patient had clear urine under the urea treatment; it was then suspended for eight weeks, and 105 grains of uric acid crystals were collected on the filter in this period. On resumption of the urea the elimination of undissolved uric acid ceased at once. The urea causes no inconveniences of any kind, he says, not disturbing either the stomach or kidneys. Its only fault is that its action ceases with its discontinuance. He also ascribes great importance to glycerine. He does not attribute any concrement-expelling power to it, but believes that it washes out the uric acid retained in the urinary canals, not deposited, and that it arrests the pains induced by concrements in the kidneys. He prescribes it in the dose of 150 gm. for a man weighing 75 kilograms; that is, 2 gm. per kilo (about 14 grains for each pound of weight). The entire dose of 150 gm. is dissolved in tea, Seltzer water or milk, and taken in four portions at two-hour intervals. This dose is repeated on one day every fourth or sixth week, and in the intervals 10 or 15 gm. of urea are taken every day. He regards this glycerin-urea treatment as accomplishing all that can be expected until we discover some means of dissolving the concrements themselves. (Journal of the American Medical Association, July 4, 1908.)

HYDROTHERAPEUTIC ACTION.

Dr. Curran Pope, in Advanced Therapeutics, summarizes as follows:—

1. An ancient measure, universally

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found possessing cleansing, antiseptic, thermic, and mechanical powers.

2. Its physiological action upon the human body is largely brought about through its disturbing influences of temperature and mechanical effects on the peripheral sensory nerves.

3. Brief applications followed by reaction do not particularly affect temperature, though temperature reduction may be best brought about by immersion accompanied by friction.

4. The circulation is increased on the surface by heat, is accompanied by dilated blood-vessels, quickened heart action, and lowering of arterial tension. Cold contracts the surface blood-vessels, slows the heart's action, decreases the pulse rate, and raises arterial tension; is followed by reaction with moderately dilated blood-vessels.

5. Respirations are increased in number, lessened in depth and oxygen and CO_2 diminished by heat. Cold, on the contrary, increases the amplitude and depth as well as the absorption of oxygen and the elimination of CO_2.

6. Metabolism in all its phases is affected by hydrotherapy, less in degree in the case of heat than with cold. As a tissue up-builder, tonic, stimulant, eliminant, depletive it is unequaled.

7. Upon the nervous system the direct action of water through its thermic and mechanical effects is conveyed to the center and there reflected in a thousandfold way, producing results both tonic and sedative that make it a true nerve reconstructor.

8. Muscular tissue is relaxed and enervated by heat; stimulated, revivified, and toned thirty-three and one-third per cent. by cold.

9. The blood is changed, leucocytosis induced, opsonic index raised, purification promoted, hæmoglobin increased, corpuscles enriched, and the alkalinity made greater by these applications. (Medical Standard, July, 1908.)

HYPERÆMIA.

J. F. Binnie, Kansas City, Mo., describes the Klapp modifications of the Bier hyperæmia treatment and gives a brief statement of his experience in its use. It consists in the daily application of cupping glasses adapted to the part five minutes at a time, alternating with three minutes' rest, for a total period of forty-five minutes. Suction is produced by means of a rubber bulb or a syringe, and should be strong enough to cause redness; if the part becomes blue or pain or paræsthesia is caused, the suction is too strong. The suction causes inflow of blood and increased exudation, thus bringing a more active protective material to the point where it will do most good. The periods of rest allow the blood to escape and a fresh supply of protective material to be brought. Wright believes that the escaping blood contains a vaccine which stimulates the production of antibodies throughout the system. If pus is present, it should be evacuated by a small cut or puncture and the cupping will aid in its removal. In his dispensary practice Binnie has learned to trust this treatment in those forms of cervical adenitis common among the poor, and usually produces a cure in seven to ten days with notable absence of scar. He has seen a large number of buboes promptly disappear after evacuation under this treatment, and it acts like a charm in the treatment of furuncles, the abortion of boils being frequently produced. (Journal of the American Medical Association, June 27.)

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MILK, FREE, DIET IN TYPHOID FEVER.

Dr. Seibert, of New York, employs the following treatment for typhoid fever in St. Francis Hospital:—

The stomach is washed out and two doses of calomel, 2 grains each, were given within two hours. Rectal irrigations with warm water were given, except when contraindicated by bowel hæmorrhage, appendicitis, or peritonitis. Cold water only was given during first day, then strained rice, oatmeal, or barley soup, with extract of meat and egg yolk, spiced. Other broths, and in case of great hunger, zwieback, were next given. Before each meal from fifteen to twenty-five drops of hydrochloric acid were given in half an ounce of water. Under this treatment general symptoms improve, temperature falls, complications disappear or fail of development, the attack is shortened and the mortality reduced. In all, 338 cases have given a mortality of 3.1 per cent. (Medical Record, June, 1908.)

MULLEN OIL FOR INCONTINENCE OF URINE.

Dr. C. W. Vroom, of Ackley, Iowa, strongly recommends for incontinence of urine in elderly people, mullen oil in 10-drop doses, once to three times a day; it has proven almost an infallible remedy with him. He has succeeded in getting the purest oil from the Luyties Pharmacy Co., St. Louis, Mo. (Medical World, July, 1908.)

OIL OF TURPENTINE.

Dr. Smith thinks that the fear of oil of turpentine as an irritant upon the kidneys, is the cause of its being so little used. In small doses, such as 5 or 10 minims, it has little tendency to produce this result, and in large aperient doses, 2 drachms to half an ounce and upward, the action of the drug is on the bowels and too little gets absorbed to pass through the kidneys. Its value may be tested in hæmorrhagic purpura, in which it may be given to a child of 5 or 6 years as an aperient, in a dose of 2 drachms, with an equal quantity of castor oil. If the first dose is insufficient it may be increased without fear of doing harm. For children of 10 or 12 years Smith has given as much as half an ounce of each of the oils. In hæmophilia a brisk terebinthine aperient will sometimes bring about a cessation of the bleeding after local styptics have been used in vain. If necessary, the dose may be repeated in six or eight hours. Local bleedings, such as hæmoptysis and the melena of typhoid, may be judiciously treated by the same remedy in smaller doses, say, 10 to 15 minims three times a day. Other conditions in which it is useful are iritis, syphilitic or rheumatic, in the adult, in drachm doses three times a day, amaurosis, and night blindness. If strangury is produced, the drug must be suspended and linseed tea be freely given. In small doses it is an antiseptic and sedative in cases of flatulent colic. In the abdominal cramps of children, 3 or 4 minims of rectified turpentine, with or without double the quantity of castor oil, mixed with a spoonful of almond mixture, may be given three times a day. This combination is useful in tuberculous peritonitis. In hiccough, 10 drops with 30 drops of spirit of nitrous ether in aromatic water, are very serviceable. A dose of 10 or 15 drops two or three times a day after food, Smith has found to relieve the catarrh of the bile-ducts. He also believes it helps in

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producing a solvent action on the gallstones. The curative value of turpentine by the mouth may often be supplemented and enforced by its use as an enema.

Puerperal eclampsia. McCarthy was led to try nitroglycerin in puerperal eclampsia by the similarity of conditions existing in patients suffering from puerperal eclampsia and in those suffering from uræmic convulsions. His cases lead him to conclude that when given hypodermically it is likely to reduce maternal mortality. He does not suggest this dogmatically, but merely holds that the remedy is worthy of further trial.

Inversion of the uterus. Atthill concludes from his observations that not alone is the center of the fundus the portion of the uterine wall most susceptible of irritation, but that very probably it is the center from which the expulsive action of the uterus takes its origin. The inference is that if a placenta be unduly adherent when it happens to be located at the fundus, or if a sessile tumor grow from the fundus, the uterus is stimulated to get rid of what has become a foreign body. (British Medical, May 23, 1908.)

OXYGEN IN MEDICINE AND SURGERY.

Dr. William Seaman Bainbridge, of New York City, gives a very clear and exhaustive résumé of the therapeutic history of oxygen from the time of its discovery by Priestley to the present day, his purpose being to stimulate scientific interest in a subject which has so long and so generally been consigned to the realm of the pseudo-scientific and the "quack." He has for a number of years employed the gas by various methods; in the present communication he deals exclusively with his experiments in the abdominal administration reporting a series of sixteen cases in which it has been employed by him with very satisfactory results. Cyanosis was found to be lessened, the surfaces of the wound became redder, the pulse and respiration improved, and shock was distinctly lessened. Blood-pressure was not materially influenced. Abdominal tenderness and pain were much less than often follows laparotomy; there was less nausea and vomiting, the bowels moved more readily, the appetite was better, and the patient was not so restless.

A series of animal experiments, scientific records of which were accurately kept by Dr. Harold Denman Meeker, are also detailed by Dr. Bainbridge. These experiments were made upon cats, and a study of these experiments leads to the following conclusions:—

1. Oxygen is completely absorbed in the abdominal cavity. 2. It is a slight respiratory stimulant. 3. It is a slight cardiac stimulant. 4. It has but little effect upon blood-pressure when the pressure of the gas is moderate. 5. It tends to bring an animal quickly from deep anæsthesia. 6. It hastens the recovery of an animal after discontinuance of the anæsthesia. 7. A pressure of more than 1500 millimeters of water may cause collapse. 8. Oxygen tends to prevent the formation of adhesions. 9. It quickly changes a dark blood to scarlet in cases of anoxæmia. 10. It stimulates intestinal peristalsis. 11. It is not an irritant to the peritoneum or abdominal viscera.

In conclusion Dr. Bainbridge evolves a scheme of possibilities for oxygen therapy. While it is not his purpose to advocate the indiscriminate and careless use of oxygen "by those whose tendency it is to follow every therapeutic

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will-o'-the-wisp," he wishes to stimulate practical interest in a subject which his own experience leads him to believe offers more of definite good to humanity than has yet been generally utilized.

A very complete bibliography of the literature of oxygen therapy follows the article. (New York State Journal of Medicine, June, 1908.)

QUININE IN SYPHILIS.

Dr. H. Napp first endeavors to obtain the tolerance of the patient for the drug for a few days, then he gives an intravenous injection of quinine from 7½ to 12 grains for two days, and then every second day. He follows Lenzmann's technic and is convinced that this treatment of syphilis has a promising future. He has applied it in 22 cases as he relates in detail, the results confirming the efficacy of quinine alone without specific local measures. The by-effects were slight and had all vanished in two minutes after the injection. None of the patients experienced any by-effects in the ears, although they always had them when quinine was taken by the mouth. (Deutsche medizinische Wochenschrift, May 21, 1908.)

RADIUM TREATMENT OF NEVUS.

Dr. Nagelschmidt reports excellent results with radium in the destruction of nevi, and claims it the best therapeutic measure known. With pure, 100 per cent. radium bromid simple, flat, capillary nevus is exposed for 5 or 6 minutes; cyanotic nevus requires 10 minutes, and protuberant nevus from 15 to 20 minutes. After about 9 days a brownish pigmentation is noticed, with slight exudation and scab formation, followed by local infiltration and superficial desquamation for several weeks. About the fifth week the nevus gradually assumes the characteristics of normal skin or the site remains more like a white cicatrix, the effect proportional to the length of the exposure. By thus treating one point after another, a large flat nevus can be entirely obliterated, the exposed area requiring only from 6 to 10 weeks for complete blanching. (Therapie der Gegenwart, Berlin, March, vol. xlix, No. 3).

SPECIFIC SERUM FOR SCARLATINA.

Dr. W. Pulawski of Rodziejow, has used Bujwids's antiscarlatina serum since 1904 in every case of scarlet fever. He has divided his cases into three groups—(1) hopeless, (2) severe, and (3) moderate and mild; and he reports on the result obtained in the *Deut. med. Woch.* of January 30th, 1908. Forty-eight patients, belonging to the groups 1 and 2, were treated in the "ordinary way," and 69 by serum. Of these, 20 of the first class died, representing a mortality of 41.6 per cent.; while 10—that is, 14.5 per cent.—of the second class died. The serum was injected on the second day in 17 cases, on the third day in 26 cases, while the number of those injected on subsequent days was smaller. The quantity of serum injected was mostly either 10 or 20 cubic centimetres, while in a few cases 30, 40, or 60 cubic centimetres were given. Albuminuria was seen in 7 per cent. of the cases, and only in fatal cases. He considers that the serum is absolutely harmless, and that by its means he obtained more than three times as good results as he obtained by other means. He considers that the serum not only lessened the severity of

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the symptoms, but also shortened the course of illness. He also believes that complications and sequelæ are prevented by the serum. In the severe and also moderate and mild cases he noted that the convalescence was more rapid than usual. (British Medical, April 4, 1908).

TUBERCULIN-OCULAR REACTION.

Dr. H. C. Parker, Indianapolis, considers the Calmette ocular tuberculin reaction for diagnostic purposes as important as any other single test. A positive reaction indicates a tuberculous focus somewhere in the body. It is uncertain in children under two years of age, in whom the von Pirquet cutaneous test is more certain, and it also fails in advanced cases of tuberculosis, where it is not necessary. The initial instillation should be preferably under 1 per cent. strength so as to avoid severe inflammatory results, and if a second stronger instillation is needed, it should be made in the other eye. The general consensus of opinion seems to be against using the test in an eye already diseased, or not completely normal. The after complications that have been observed have cleared up in a varying length of time. They are not so common when the initial test is made with a solution under 1 per cent. in strength. It has been found lately that a greater number of ophthalmic affections are tuberculous than has formerly been supposed, and here the Calmette test is particularly applicable. It is of especial value in determining the tuberculous nature of cases of phlyctenular conjunctivitis, episcleritis and scleritis, chronic iritis and iridocyclitis, interstitial keratitis and chorioiditis. A 1 per cent. solution of Koch's "old" tuberculin is nearly as good as the Calmette solution for diagnostic purposes. (Journal of the American Medical Association, June 27, 1908.)

Book Reviews

TEXT-BOOK OF OPHTHALMOLOGY. Ernst Fuchs, M.D., Professor of Ophthalmology in the University of Vienna. Authorized Translation from the Eleventh Revised and Greatly Enlarged German Edition with Numerous Additions. Alexander Duane, M.D. There are 441 Illustrations. 908 Pages. J. B. Lippincott and Co., Philadelphia.

We welcome this third English edition (eleventh German edition) fresh from Vienna. While new works and new editions of old books are crowding us rapidly, we take more than a passing interest in this work.

New matter and new wood-cuts have been added, which is as it should be for the advanced student. This work bears everywhere the marks of Dr. Duane's revision, bringing the book up-to-date in all its parts—making it especially valuable to the American student and practitioner of ophthalmology.

We look to our German confreres for that scientific and ultra-scientific knowledge they make part of themselves and which they show in all their scientific books.

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Wherever the translator has added special matter, and he has added considerable, he has followed these insertions by signing his initials.

We congratulate the publishers on their work and we predict a large sale for this book.

SUBCUTANEOUS HYDROCARBON PROTHESES. By F. Strange Kolle, M.D. Author of "The Recent Roentgen Discovery," "The X-rays, Their Production and Application," "Medico-Surgical Radiography," etc. The Grafton Press, Publishers, New York.

Here is a little volume of one hundred and forty pages which places before the profession a thoroughly practical and concise treatise on the subcutaneous employment of hydrocarbon for correction of defects about the face, neck and shoulders. The author first discusses the indications, precautions, untoward results, reaction, infection, necrosis, sloughing, sub-injections, hyper-injections, etc., after which he takes up, in a graphic style, the technic and the specific classification for the employment and indication of hydrocarbon prothesis about the face. So ably does the author describe the deformities, especially of the face, chin, nose and ears, and their corrections, that the book is an indispensable one to all those who follow this particular practice. A number of illustrations aid in explaining the text.

PHARMACOLOGY; THE ACTION AND USES OF DRUGS. By Maurice Vejux, M.D. Philadelphia: P. Blakiston's Sons & Company, 1012 Walnut Street.

This little volume is exactly as the author claims, full of facts essential to an ordinary medical student without profound scientific discussions of opposite opinions.

He classifies the different drugs into groups according to their physiological actions, also giving a brief description of each drug with its therapeutic application and its preparations. The text is probably better adapted for the busy practitioner, because it is rather short in its description as regards the physiological action of the drug. The facts contained in the volume are concise and unbiased, and we take pleasure in recommending it as a valuable work on the subject.

INSOMNIA AND NERVE STRAIN. By Henry S. Upson, M.D., Professor of Diseases of the Nervous System in the Western Reserve University, Attending Neurologist to the Lakeside Hospital, Cleveland, Ohio. With Skiagraphic Illustrations, Price $1.50. New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1908.

Here is a unique little volume, one which deserves the thoughtful consideration of *every* practitioner. The author reports twenty-five cases in which impaction of a tooth or abscess formation at the root of a tooth or teeth has directly caused either insomnia, melancholia, hysteria, acute mania, incipient dementia præcox, neurasthenia, etc.

The extraction of the involved tooth or teeth and drainage of the abscess was always followed by complete recovery. Indeed, the reviewer believes that many asylums contain inmates of psychoses without an apparent cause that suffer from similar causes.

The author also describes the action of the nervous system in regard to vascular control, in inhibition, nutrition, and shock; and the specific differences are formulated between vital and non-vital matter, and between nerve cells and lower tissues.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

THE TREATMENT OF CHRONIC BRIGHT'S DISEASE.[1]

BY REYNOLD WEBB WILCOX, M.D., LL.D.,
Professor of Medicine at the New York Post-Graduate Medical School and Hospital; Physician to St. Mark's Hospital.

IT is not with the intention of presenting an exhaustive paper that this subject has been chosen. It is rather that from a discussion of known facts our treatment may be more intelligent. Richard Bright, in 1827, described three kinds of kidneys as found on *post-mortem* examination: 1. Yellow, mottled; less firm, enlarged or not. 2. Opaque, whitish; more firm, enlarged. 3. Rough, scabrous; hard, firm, shrunken.

The first, the kidney of acute nephritis, does not concern us. Even as late as 1847, Watson had not differentiated the second and third varieties in terms of clinical expression. The real advance in nomenclature which should be kept in mind is that the third variety, commonly known as chronic interstitial nephritis, is really a chronic arterial nephritis, as proposed by Cornil in 1884. Clinically, the second variety of kidney, the chronic parenchymatous nephritis, occurs in the young as well as the old; is accompanied by dropsy; uræmia may occur at any time; the course of the disease is marked by weakness, with anæmia; it is generally secondary to acute disease, and the urine is variable in quantity. Anatomically, it is a large, white kidney; the interlobular and glomerular spaces are packed with *débris;* the capsule is not adherent. In marked contrast is the chronic arterial nephritis which is found in the old;

[1] Read before the 144th Annual Meeting of the Litchfield County Medical Association at Winsted, Ct., April 28, 1908.

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dropsy is found only when the heart fails; uræmia is a late symptom; there is weakness without anæmia; it is always primary, and polyuria is invariably a prominent symptom. Anatomically, the kidney is small and red; the fibrous tissue is marked; the capsule is adherent, and so-called albuminuric retinitis is as frequent as it is rare in the parenchymatous form.

It is not peculiar that when two such contrasted conditions are discussed under one title that our treatment has become uncertain. In the dietetic treatment, certain underlying principles are common to both forms; but careful observations must be carried out in order to determine if the most is obtained from the schedule. Fortunately, two sources of error are readily apparent if the urine is tested for indican (intestinal putrefaction), and for increase of uric acid (incomplete oxidation of proteids). The diet must be regulated in quantity and quality of all elements which are necessary for food: 1. Inorganic elements which act mechanically. 2. Heat producers, such as starches, sugars, fats. 3. Proteids and tissue builders, such as beef, eggs, and milk. 4. The nucleo-albumins for phosphorus, for hæmoglobin and lecithin. Wheat, beef, and milk do not contain a sufficient quantity of the nucleo-albumins for complete tissue builders.

Hygienic conditions are suggestive, subject to much modification, as exercise in the open air, clothing, mental and physical rest, and avoidance of overtaxing digestion, especially at night. Of medicinal treatment in the second variety, the diminution of sodium chloride ingestion in marked anasarca yields pronounced results, which are readily verified by weighing at regular intervals. Strontium lactate, from one-half to two drams daily, not in acute exacerbations, however, markedly diminishes albuminuria. Iron is generally useful. For the arterial type, erythrol tetranitrate of the British Pharmacopœial Conference, in from $\frac{1}{10}$- to $\frac{1}{2}$-grain doses, several times daily, is physiologically a nitrite, and is suitable for prolonged use. Strontium lactate is not useful nor indicated. Of special symptoms, uræmia, since the days of Piorry (1847), is generally of undetermined pathology, which is merely physiology under difficulties, is best combated by high intestinal irrigations: three gallons of normal saline solution, at a temperature of 115° to 120° F., through a twelve-inch rectal tube under three feet of hydrostatic pressure. The normal saline, accurately, is sodium chloride, 0.9; calcium chloride, 0.026; potassium chloride, 0.01, with water to 100. Convulsions in old subjects generally means sudden colon bacillus invasion, and calls for calomel in small and frequent doses. Later, hexamethylamine and sodium benzoate, of each 10 grains, may be given every three hours.

Coma may be treated by an intravenous saline transfusion after a preliminary venesection. Twenty minims of tincture of veratrum, every fifteen minutes to six doses, is often satisfactory. Dyspnœa of the nocturnal variety requires the vasodilators. Rarely hydrated chloral is permissible, but its use is to be deprecated.

Renal decapsulation has been a sufficiently long time before the profession for a final judgment. It is clearly useless in arterial nephritis when this is a local manifestation of a general pathological process. We are, however, hardly

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prepared to go so far as Jacobson, who, in speaking of renal decapsulation, says: "Published facts do not lead us to hope for favorable results from surgical interference in Bright's disease"; and again, "Experimental evidence lends but little, if any, support to the advocates of this operation, and it fails to demonstrate any but anatomical reasons for its supposed success. The literature of the subject is full of vagueness, inaccuracy, and confusion."

The opinion of Guiteras seems more fair: he refers to his previous circular sent to one hundred and fifty of the most prominent American surgeons, asking for information of their results in Edebohl's operation of decapsulation for Bright's disease. He received replies from forty-two surgeons, giving an aggregate number of 120 cases so treated. The result showed: Cured, 16 per cent.; improved, 40 per cent.; unimproved, 11 per cent.; deaths, 33 per cent. A recent circular to the same forty-two surgeons forms the basis of the present communication. Only twenty-one replied, reporting 40 cases, with a result: cured, 1 case; improved, 3 cases; unimproved, 3 cases; died, 33 cases (82½ per cent.). His conclusions are: "1. Finally, I may say that I do not believe in total decapsulation, but that I am a firm believer in partial decapsulation of a sufficient portion of the kidney area, on the posterior surface only, to assist in fixation if the kidney is movable. 2. If the kidney is not movable, I believe that the tension will be removed by simply incising the capsule over the convexity. 3. If there are symptoms of unilateral nephralgia and hæmaturia, I would perform nephrotomy, not only as an approved operation, but also as an exploratory means of determining a possibly existing surgical disease."

I certainly would not exclude decapsulation in certain instances of chronic parenchymatous nephritis.

Irrigation of the renal pelvis was proposed some two years later than decapsulation. Its leading advocate attributes his results to (1) cleansing the renal pelvis of the products of inflammation; (2) establishing better drainage by the repeated passage of the ureteral catheter; (3) counter-irritation of the kidneys by the use of hot, slightly irritating solutions; (4) the possibility that the lymphatics may take up some of the antiseptic solution and carry it through the organ. Nothing is claimed for the treatment in arterial nephritis. It may be safely said that the treatment has failed to yield the results hoped for it by its earlier advocates.

If this brief presentation of some of the resources at our command shall lead to a more practical end and to a clearer conception of the clinical and anatomical differences between diverse conditions grouped together under one category, its purpose will be attained. We may conclude that in the treatment of both forms of chronic Bright's disease: 1. Most etiological factors can be modified. 2. The disease, although physiologically curable, yet is histologically incurable. 3. Remissions must not be mistaken for cures (especially in estimating the value of surgical measures). 4. All therapeutics must be rational, and based on *(a)* a well planned diet; *(b)* well regulated metabolism, and *(c)* decreased work of the kidneys.

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SOME REMARKS UPON TUBERCULAR KERATITIS, WITH REPORTS OF CASE.[1]

By WILLIAM CAMPBELL POSEY, M.D.,
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PHILADELPHIA, PA.

Although the great majority of cases of interstitial keratitis are undoubtedly due to inherited syphilis, no syphilitic history is obtainable in at least 30 per cent. of the cases, and in recent years there has been a growing conviction that tuberculosis is responsible for many of these non-syphilitic cases. Hippel, Zimmerman, and others have found tubercular nodules with giant cells in the cornea of suspected cases, and tubercule bacilli, though few in number, have been observed in the giant cells.

Bürstenbinder, in his inaugural dissertation on tubercular iritis and keratitis, reported three cases which presented the ordinary picture of interstitial keratitis, which were proved later to be of tubercular origin.

Injection of animals' eyes with tubercule bacilli has been followed by the projection from the limbus of a tongue-like infiltrate into the cornea, which disappeared, leaving a haze. Nakagana found bacilli in the deeper layers of the cornea, with invasion through Descemet's membrane and tubercular iritis, and Stock, by injecting living tubercule bacilli into the blood-stream of rabbits, produced a severe iritis and interstitial keratitis without nodular formations and without bacilli, which he attributed to the effect of toxins.

Opinions differ widely concerning the type of corneal inflammation which tuberculosis gives rise to, some maintaining the impossibility of distinguishing tubercular keratitis from the syphilitic variety, while others have ranged the types of inflammation into groups. Bach, for example, has proposed the following clinical classification: The *parenchymatous* type, attributed to the action of tuberculous toxins on the parenchyma; the *sclerosing* type, attributed to tuberculous disease of the pectinate ligament; keratitis of the corneoscleral margin, unassociated with tuberculous disease of the iris or pectinate ligament, and corneal affections secondary to bacillary tuberculosis of the conjunctiva. *Sclerosing parenchymatous keratitis* is described by him as being probably tuberculous in nature. This form of corneal disease begins with a localized episcleritis, near the limbus, followed by a nodular, parenchymatous eruption a little distance from the seat of the episcleritis. Between it and the margin of the cornea the corneal tissue is healthy, or, at most, œdematous.

In the writer's experience, the projection of a tongue-like area of yellowish-white infiltrate from the limbus into the interstitial lamellæ of the cornea toward its center and the occurrence of discreet yellowish-white oval areas, which appear caseous and avascular, is very significant of tubercular keratitis, while he has observed the deposition of small rounded areas resembling drops of cold mutton fat upon the posterior surface of the cornea or in

[1] Read before the Wills Hospital Ophthalmic Society, February 4, 1908.

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the lamellæ of the cornea, secondary to tubercle of the iris and of the deeper parts of the eye. According to Michel, the typical picture of tubercular interstitial keratitis is almost always preceded by the formation of tubercular nodules in the pectinate ligament, the corneal involvement appearing secondarily. Bach, however, is of the opinion that tubercular nodules may be found primarily in the periphery of the cornea.

Both Von Hippel and Zimmerman hold that tubercular keratitis may exist without any other discoverable signs of tuberculosis in the body whatsoever. Fuchs, Leber and De Wecker, however, dissent from the view that the eye is ever the primary seat of tuberculosis, contending that a primary tuberculous focus (*e.g.*, caseous bronchial glands), although not demonstrable clinically, must be assumed to exist.

In his valuable and comprehensive monograph upon "Intraocular Tuberculosis," which was read before the Congress at Madrid, Treacher Collins cites a series of interesting examples of how the eye may be infected with tuberculosis, and has discussed the various modes of exogenous and endogenous involvement. Thus, as an example of the former, a case of Greef's is recorded where a tuberculous patient infected his own cornea by a scratch of the fingernail, a vascular ulcer forming, which showed but little tendency to heal.

When the uveal tract is the seat of tuberculosis, Collins states that the cornea may be invaded by typical tuberculous nodules, or it may be the seat of a diffuse inflammatory infiltration, *i.e.*, interstitial or parenchymatous keratitis.

The first mode of invasion is well illustrated in a case of solitary tubercle of the iris which the writer presented before the American Ophthalmological Society in 1904, in which Descemet's membrane gave way under pressure from the tubercle, permitting the substantia propria to become invaded by the tubercular tissue.

Case II illustrates the second mode of invasion, as it is not unlikely that the interstitial haze was originated by toxins generated from the tuberculous nodules of the iris.

The treatment of tubercular keratitis is, as might be supposed, unsatisfactory. Expectant measures are usually the safest and wisest, though the employment of tuberculin has often been of undoubted value. The observations of Gamble and Brown, of Chicago; of Von Hippel, of Goettingen, and of many others attest this. Von Hippel insists upon the propriety of small doses (a beginning one of $\frac{1}{500}$ milligram), as in a few cases $\frac{1}{50}$ milligram has produced marked local reaction. In his opinion, sub-conjunctival injections should be discountenanced, and old tuberculin to confirm the diagnosis before beginning the treatment with tuberculin T. R. is recommended. Under the tuberculin treatment, Von Hippel has found that the general health of the patients improved in almost all cases; enlargement of the spleen and lymph glands disappearing, and the body weight increasing.

Current medical literature is so full of the Calmette serum reaction in the diagnosis of tuberculosis, that reference need not be made to the general purposes of the test here, further than to state that the rapidly increasing

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weight of evidence which has accumulated within the past few months indicates, in the words of Stephenson, that "the test is a simple, trustworthy, and practically harmless means of diagnosing tuberculosis in any part of the body." In its value in diagnosing obscure ocular lesions, however, this society has considerable interest, and though time forbids more than a passing reference, mention should be made of the researches of Stephenson (*The Ophthalmoscope,* December, 1907) and his experiences with the Calmette method in forty and more cases of ocular disease. A 1 per cent. watery solution of tuberculin, exactly as recommended by Calmette, was employed. To quote Stephenson, the reaction "caused no distress to any one of the patients. In almost every instance it was noted that the reaction involved mainly the lower palpebral conjunctiva, together with the lower half of the ocular conjunctiva, the other parts of the mucous membrane of the eye being relatively much less affected. In several cases reaction was severe, and lasted for a week or longer.[2] Chemosis, however, was not observed. On several occasions reaction was delayed, *i.e.*, did not supervene for twelve or fifteen to twenty-four hours after the application.

"Speaking generally, a positive reaction was obtained in every eye case where there existed clinical evidences of tubercle. Examination subsequent to the ophthalmo-reaction disclosed tuberculous foci in some instances where the latter had hitherto lain unsuspected. In another group of cases, careful examination failed to reveal any tuberculous lesion, although the Calmette reaction was obtained. Lastly, in many cases where there were no grounds for believing that tubercle existed, the Calmette reaction was negative. The general outcome of my experience has been to leave me under the impression that in the Calmette reaction we have been endowed with a most valuable means of recognizing tubercle."

Though Stephenson found the test to be harmless to the eye, a number of reports have appeared of alleged ocular injury from the diagnostic instillation of tuberculin. De Lapersonne, of Paris, has investigated these cases, and in a recent paper (*Presse Médicale,* Paris, December 7, 1907), entitled "Is the Ocular Reaction to Tuberculin Dangerous for the Eye?", cited six cases where complications always took the form of an ulcero-vascular keratitis, and with one exception were only observed in pre-existing lesions of the cornea, and vision was not impaired. In two other instances, where the patients were elderly, the intraocular complications were more serious, entailing irido-cyclitis. De Lapersonne's conclusions are that "Calmette's ophthalmo-reaction" is harmless for the eye, but that the complications exceptionally observed impose caution in its application, although no absolutely certain direct connection between the accidents observed and the instillations can be demonstrated in any instance. It is wise never to instill the tuberculin until after a thorough

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2 "J. Comby met with an excessive reaction twice amongst 24 children. In order to avoid this undesirable result, he recommended the use of an 0.5 per cent. solution of tuberculin, which he employed in 108 patients, in whom the reaction was never more than moderate."—(La Presse Médicale, July 17 and 24, and August 10, 1907.)

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examination of both eyes. It is also best to refrain from applying this method in differentiation of lesions of the eyeball, deep or superficial, although it might be used in the diagnosis of affections of the lids, orbit, and lachrymal passages. The reaction is generally most pronounced in children. In the elderly so many factors may intervene that the result is liable to be misleading, while, if complications do occur, they may take a long time to subside. The complications which he has been studying did not manifest themselves, nor did the reaction, until from ten to twenty days after the instillation. It seems almost as if some local or general intercurrent infection might be able to re-arouse or to maintain the reaction in a tuberculous individual." (Abstract from *Journal of the American Medical Association,* January 18, 1908.) The following are brief notes of cases which the writer has under observation at the present time:—

CASE I.—In November, 1905, E. D., colored, aged 12 years, consulted the writer at the Polyclinic Hospital, upon account of the right eye, which had been sore for about a year. His health had been poor, but he had had no cough. No family history of tuberculosis obtainable. The right eye was found to be the seat of some tarsal and ciliary injection. The cornea was dull and avascular, and was infiltrated in the interstitial lamellæ by a number of homogenous yellowish-white oval areas, which were separated from one another by clear corneal tissue. The iris appeared normal. The left eye was healthy. O.D.V. = 5/12. O.S.V. = 5/5. The cervical glands were enlarged, and there was an apparent consolidation of the right apex.

Appropriate local treatment was employed and the patient treated as an in-patient for a period of six months, with tonics, codliver-oil, and subcutaneous injections of tuberculin after the method of Von Hippel. A constitutional reaction and some local injection was obtained when the dosage reached the strength of 1/50 milligram. The acute ocular symptoms gradually subsided under treatment, the areas of infiltration partially absorbing without loss of corneal epithelium. Inspection of the eye at this time shows it to be quiet, though the cornea is somewhat diffusely hazed. Vision in the affected eye equals 5/6. The boy is in good health and attends school regularly.

CASE II.—W. C., a colored male, 25 years old, came to the Wills Hospital in November, 1907. The patient had been married for seven years, and had a son 2 years old, who was living and well. His wife had had no miscarriages. Venereal disease was denied. There was a history of scarlet fever at 8 years of age, but health had been otherwise good. The ocular inflammation for which relief was sought and which was the primary attack, was of six weeks' standing. Examination showed both cornea to be dull and lustreless, this being particularly marked in the left eye. When viewed with the loupe, three irregularly-shaped, grayish-white avascular masses were seen projecting into the anterior chamber from its periphery, in the left eye, and two in the right. The entire cornea was hazy, which was seen to be occasioned by the deposition of numerous small nodular masses and large oval ones in and upon the posterior layers of the cornea. These masses resembled drops of cold mutton fat. The iris was thickened and inflamed. No view of the fundus was obtainable on

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account of the hazy cornea. Vision in the right eye $\frac{1}{30}$; in the left, hand movements only.

The patient was admitted to the hospital and given appropriate local treatment. Increasing doses of tuberculin were administered under the supervision of Dr. John M. Swan, an initial dose of 1 milligram being administered. At a dosage of 3 milligrams the temperature rose to 100⅗, and the eyes became more injected. After an interval of three days, 5 milligrams were administered, the temperature rising to 103°. At this time the patient developed considerable aural pain with symptoms of mastoiditis, so that he was removed to the Howard Hospital for a possible operation. Two days later, the aural symptoms continuing, the mastoid cells were opened by Dr. G. B. Wood, and found to be full of pus. A marked improvement in the local condition rapidly followed a radical operation upon the cells, and the ear is now practically healed. The ocular condition has also improved, the cornea being much less steamy and vision having risen in O.D. to $\frac{5}{40}$ and in O.S. to $\frac{2}{40}$.

The lowered vision in the left eye is probably the result of an incision into the anterior chamber and the removal of a portion of one of the caseous masses from the eye by the writer, for the purpose of inoculating the eye of a rabbit at the time of admission, considerable reaction and hæmorrhage into the anterior chamber following the procedure. Dr. C. M. Hosmer, of the Ophthalmological Laboratory of the University of Pennsylvania, who had charge of the inoculation experiment, reports that the eye of the rabbit which was injected six weeks ago, has shown no signs of tubercular involvement as yet.

Case III.—A colored woman, aged 20, was in attendance at the Will's Hospital at the same time as Case II, with a diffuse interstitial haze of both cornea. Numerous small, rounded, gray nodules were scattered throughout the parenchyma, the entire cornea being quite dull and opaque. Vision was reduced to hand movements. A specific history could be excluded. There was some evidence of a hereditary tendency to tuberculosis, and the right apex was found to be consolidated. Weak doses of tuberculin were administered by the stomach, and later stronger ones under the supervision of Dr. Swan, who finally obtained a marked general and local reaction with 5 milligrams. The employment of the tuberculin was desisted in after the reaction was obtained, but the improvement in the ocular and general conditions continued, the patient being discharged at the end of six weeks with $\frac{5}{40}$ vision in the right eye, and $\frac{4}{40}$ in the left, having also gained in weight.

The writer has recently seen another case where the clinical picture suggested tubercular keratitis, though the one examination which was made afforded no opportunity of corroborating the supposition by proper clinical and laboratory tests.

Case IV.—Mrs. B., aged 38, a large, healthy-looking married woman, stated that the left eye had been sore for almost a year, though the vision had been compromised but four months. There was no history of traumatism, and the patient thought her health was and had been good. The cornea was steamy and infiltrated with small rounded and globular masses which resem-

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bled cold mutton fat. A large vascular trunk, with its branches, projected into the cornea from the periphery. There were marks of old iritis, though no nodules appeared in the iris; but a faint red glare was obtained from either fundus on account of the corneal haze. The right eye was normal, vision equaling 5/5. The vision of the left eye was reduced to counting fingers at 1 millimeter. Entrance into a hospital was advised for proper local and systemic treatment, but the patient failed to avail herself of the opportunity which was afforded her.

THE VALUE OF MORPHINE DERIVATIVES IN OCULAR THERAPEUTICS.[1]

By L. WEBSTER FOX, A.M., M.D.,

PHILADELPHIA, PA.

Some of the newer salts of morphine, but whose efficiency or improvement over the older and more stable preparations has not been proven, are anisate, benzoate, borate, phthalate and tartrate, saccharinate, stearate, heroin—an acetic ester of morphine—and ethyl-morphine hydrochlorate (dionin). This latter derivative is the only one which has proven of value in ophthalmic practice. From the time that Dr. Wolfberg, of Breslau, drew the attention of the profession to its use in the treatment of eye-diseases, many other investigators have tested it in a large number and several kinds of cases. Darier, of Paris, was enthusiastic as to its value, and many articles upon its use by other ophthalmic surgeons have been published.

Ethyl-morphine hydrochlorate is a derivative of morphine, having the chemical formula $C_{19}H_{23}NO_3HCl + H_{20}$. It is supplied as a white, odorless, bitter powder, soluble in about seven parts of water. It is an advantage that its aqueous solution keeps unchanged for a considerable time. In ophthalmic practice it has been used in the powder form, in aqueous solutions of from 1 to 10 per cent., as an ointment, or in rods of cocoa butter of the same strength.

When applied to the eye, dionin produces a smarting sensation, and even a slight pain at first, followed by sneezing in many cases. There is more or less vascular injection and chemosis of the conjunctiva, with an increased flow of tears. Dionin has no effect on the pupil, the accommodation or intra-ocular pressure. In one patient, however, I noticed that after needling for soft cataract and making an application of dionin, the pupil became contracted, although full atropine mydriasis existed before its application. The pupil again dilated after the chemosis of the conjunctiva disappeared.

When the drug is for the first time used, in 5-per-cent. or 10-per-cent. solution, the rapidly induced chemosis is most alarming to witness, but a study of its action has shown that it is only produced by the stronger solutions. With the weaker (1 per cent. or 2 per cent.) there is no chemosis and but little smarting is produced. Darier, however, claimed that the more intense the

[1] A paper read at the Ninth Annual Meeting of the American Therapeutic Society in Philadelphia, May 8, 1908.

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reaction, the greater is the benefit produced. Dionin is an analgesic, and its action sets in within a few minutes after it is applied to the eye; but it is not an anæsthetic, the sensibility of the cornea remaining unchanged by its use, In this it differs from cocaine and holocain, both of which are anæsthetics, as well as analgesics; but cocaine and holocain are inferior to dionin in analgesic effect.

Many ophthalmologists in France, Germany, Russia, and the United States have experimented with dionin since Darier so persistently forced its claims upon the notice of the profession, and it has been tested in a great variety of cases, such as acute conjunctivitis, trachoma, blepharitis, scleritis, pannus, parenchymatous and phlyctenular keratitis, ulceration of the cornea, corneal opacities, iritis, vitreous opacities, retinal detachment, choroiditis, glaucoma, and secondary cataract.

The majority of writers agree in stating that dionin has a distinct influence in relieving pain, especially when connected with corneal or uveal affections. It also shows a marked influence in clearing corneal opacities, which action is attributed to its lymphagogic effect, and it has been claimed that it is distinctly useful in iritis and retinal detachment.

Reports of its action in the hands of different investigators have somewhat varied, and it may not be uninteresting to furnish yet another report of the results from its use as observed in the Ophthalmic Department of the Medico-Chirurgical Hospital in Philadelphia, and also in my private practice.

The value of this drug lies in the mode of its application. My experience, in many cases, proves that the sub-conjunctival injections give better and quicker results than the topical application, especially in those acute forms of interstitial keratitis which have resisted all forms of mercurial medication. In many varieties of this, at times, intractable disease, after three sub-conjunctival injections of a 2-per-cent. solution, I have frequently found the cornea rapidly become clearer, and then, with the addition of mercurial inunctions get perfectly well. My assistant, Dr. Brophy, has applied this derivative of morphia in the shape of an ointment to a great variety of chronic corneal opacities and opacities following granular lids. If any clarification of the opacities occurred it came very slowly. In fact, we have come to the conclusion that this method of treatment of long-standing opacities has little, if any, therapeutic value.

In the treatment of acute ulcerations dionin has much value, especially in the marginal ulcers of old people. I can record case after case of this form of ulcer and several dendritic ulcers, in which other forms of treatment seemed to fail and prompt healthy reaction and complete recovery were established by the dionin treatment.

In retinal detachment I have, as yet, failed to see any benefit from this drug alone, whether applied locally or by sub-conjunctival injection. My practice, in these cases, is to make a sclerotic incision and drain off the sub-retinal fluid. I keep the patient in bed six or seven days, resting quietly, then make a sub-conjunctival injection of dionin to assist in clarifying the cloudy vitreous. By this surgical and therapeutic combination I have had surprising results in

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20 per cent. of my cases. When one recalls the former methods of treatment and the disappointing results, this is, to say the least, encouraging.

My experience leads me to believe that for vitreous opacities from any inflammatory cause a combination of sodium saccharinate and dionin gives better results than either of these drugs afford when used alone. I make these sub-conjunctival injections three times weekly, the quantity being from ten to twenty minims.

After giving this derivative a thorough trial in many ocular diseases, in none is its action more strikingly shown than in painful iritis. By the use of the 5-per-cent. solution pain will cease within two hours, and more rapid relief will be obtained by sub-conjunctival injections than when the drug is applied to the eyeball.

My experience has not led me to advise the use of dionin in acute glaucoma. In several of such cases it neither afforded relief from pain nor a lessening of the tension, and an operation became the only resource.

In the short time allowed for a paper of this character no one can do full justice to his subject; I shall, therefore, have to present a brief summary of my experience, which has extended over several years:—

1. Ethyl-morphine hydrochlorate may be used in a solution of from 1 to 10 per cent., or in an ointment or powder form. It is an analgesic and not a local anæsthetic.

2. It is most valuable when combined with atropine in painful acute iritis and irido-cyclitis, and it assists in breaking synechiæ and relieving pain.

3. It is of some value in recent corneal opacities, but its value is doubtful in old opacities.

4. It is of some benefit in recent vitreous opacities, but its use is doubtful in chronic hyalitis.

5. It is doubtful whether it is of use in detachment of the retina.

6. I have made repeated applications in secondary capsular cataracts, but have noticed no exceptionally rapid clarification of the pupillary space.

7. It affords no special aid in the absorption of the lens matter in a soft cataract after needling.

8. It is not necessary, as a rule, to confine the patient in bed during the treatment.

9. The reaction is violent after the first three injections, but it subsides in about an hour's time.

This is my summary of the use of dionin in ophthalmic practice. In regard to the results experienced in the use of the other derivatives of morphine, I am not yet ready to report.

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FURTHER OBSERVATIONS ON THE USES OF CHROMIUM SULPHATE IN MEDICINE.[1]

By LOUIS KOLIPINSKI, M.D.,

Member of the American Therapeutic Society.

WASHINGTON, D. C.

At the annual meeting of the American Therapeutic Society, May, 1902, the writer read a concise paper on the "Therapeutics of Chromium Sulphate." As far as he knows the statements there made have not been confirmed by others, nor has this chemical attracted attention as a medicine.

Since that time the chromium salt has been used continuously by him in the treatment of the maladies previously specified, and also in others with good and favorable effects. It is therefore now proper to review the subject anew, to verify what has been said, and to add whatever has been recognized since then.

Dosage.—Because chromium sulphate causes no toxic symptoms, the dose originally given has been much increased. Instead of one to four grains, eight grains three or four times a day is the quantity administered. Thirty to forty grains at one time result in no unusual sensations, except a very mild vertigo or lightness in the head.

A four-grain tablet or pill is the most convenient form. It is better taken after than before meals. Occasionally the unabsorbed residue colors the fæces. Chromium sulphate dissolves in water very slowly.

No unpleasant by-effects have been observed in patients who have taken it continuously for as long a period of time as four or five years.

The diseases in which chromium has been used with success are: Cirrhosis of the female breast, castration, menopause, functional impotency in men, chronic alcoholism, nervous vomiting and vomiting in pregnancy, neurasthenia, locomotor ataxia, exophthalmic goitre, and the migraines.

Of these, neurasthenia, exophthalmic goitre, and locomotor ataxia are of particular interest and importance. Results from this salt are speedy and striking. In the forms of neurasthenia it deserves the unique position of being the only drug which is curative, dispensing with all treatments of rest, travel, diversion of mind, dietetics, and physico-mechanics.

In exophthalmic goitre the rapid pulse and churning motion of the heart are invariably reduced to nearly normal; the pulse remains so. The nutrition of the body is bettered, the trembling ceases, likewise the state of nervous erethism and irritability. The bulging eyes and struma recede slowly.

The cases treated have been for the greater part old, neglected or mismanaged ones. Fresh cases yield prompt results. Founding his opinion on this treatment, the writer cannot believe that surgical operation in this disease

[1] Read at the Meeting of the American Therapeutic Society, Philadelphia, Pa., May 8, 1908.

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is proper. The risk to life and instability of cure make such undertaking uncertain and extreme.

Locomotor ataxia is curable with chromium sulphate. The more recent the case and the earlier the treatment, the quicker the result. The neuralgic pains and the several forms of crises, especially the epigastric, succumb to its use. Hypnotics, anodynes, and anti-neuralgics are not administered. The writer has seen a number of first stage cases in which all symptoms vanished and no further ones appeared.

The essential action of chromium is displayed in the second or atactic stage by permanently removing the inco-ordination of muscle actions. The staggering walk and the unsteady motions of the hand, the paralytic weakness of vesical and rectal sphincters, are restored to normal function.

In the third stage most decided improvement is possible. The patient's chances of betterment are good. The profoundest atactic unsteadiness, the paralysis of the lower limbs making standing an impossibility, can be so far removed that the use of the legs is regained, not alone in standing erect, but in walking fairly well with or without crutches. In fact, the patient's condition becomes again that of the first stage, and this then recedes.

The single symptoms of locomotor ataxia, and the changes they undergo in the chromium treatment, can be thus stated:—

The ataxia in its various forms disappears. Tabetic pains require no other medicinal treatment.

Diminution of sensation, tactile pain, touch and temperature senses are restored gradually if obtunded. Anæsthesia the same.

The Argyll-Robertson pupil and absent patellar reflex are permanent impressions of the disease, as no diagnosis can be confirmed without their existence; so in greatly improved or cured instances they have still been found present. Paralyses of the external ocular muscles are transient.

Atrophy of the optic nerve does not occur, or, if already present, does not advance. Hearing, taste, and smell are never markedly affected.

Atony and paralyses of vesical and rectal sphincters restored to functional action, and total sexual impotency has been known to be replaced by normal power in old, far-advanced cases. The various forms of crises are cured. Constipation is replaced by regular alvine evacuations.

The rapid pulse, if present, is reduced to normal. Shedding of the hair and nails, submucous hæmorrhage, perforating ulcer of the foot, spontaneous fracture of bone and joint effusions have not been observed to develop during the treatment. Further, no case of progressive paralysis of the insane, dementia, paralytica. In one case much abused, a right-sided cerebral hemiplegia occurred.

The following is the present condition of a man of fifty years, tabetic for ten years, who has been treated with chromium for five years. In the beginning he was helpless and hopeless, and was so generally considered by a number of medical men:—

Sexual function normal.

Tabetic pains: none or but rarely.

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Anæsthenia: right hand, normal; left, very slight.

Function of hand is ambidexter, formerly unable to write at all.

Girdle sensation: gone.

Migraine attacks: gone.

Neuralgia of face: gone.

Vision not impaired.

Pupil reaction and tendon reflex, none; bladder function normal, formerly incontinence.

Locomotion: with cane can walk for an hour without fatigue; unaided, for ten minutes. There is no unsteadiness at all in legs, but muscular power not of normal endurance.

Cutaneous sensibility not effected.

A mild cystetic present due to former urethral stricture. Heat and cold sensation normal. Color sense normal; hearing not affected; pulse, per minute, 72 erect; weight, 184 pounds.

In the treatment of locomotor ataxia two important adjuvants must be employed: A nutritious, fat-making diet, and moderate, regulated exercise of the lower limbs in walking. Where the patient is unable to walk or where he is in danger of falling from loss of power of equilibration, active in-door exercises, as with the pedal machine—the pedals of a bicycle secured to a frame or upright. All atatics have suffered great loss in weight. The emaciation is apparent in the legs, so that their slender outlines, on inspection, can be used as a symptom suggestive of the disease.

The treatment of tabes requires, on the part of the practitioner, tact, patience, and forbearance. The mind and thoughts of the tabetic are gloomy and hopeless. Scepticism and distrust prevail. The knowledge of the name of his disease engenders a variable degree of despair, which may culminate in suicide. He will, in all probability, find out that a syphilis of former years, a Nemesis of secret vice, has doomed him to be incurable and helpless. The most seek aid from superstition or fraud, arts which are practiced only among those able and willing to pay. A tabetic subject, well plundered by charlatans, when compelled to throw himself into the hands of a medical man, never becomes a willing or grateful patient. The human mind, once tricked, suspects tricksters everywhere.

Where the tabetic is received as a recent and untampered case, and marked improvement quickly appears, another obstacle impedes the finishing work. He becomes dissatisfied, considers further treatment unnecessary, omits it, and thoughtlessly continues to live or diverts himself with self-medication or irregular treatment. Perchance it occurs to him that his primal foe, the venereal infection, deserves a renewed assault, and the anti-syphilitic forces are brought up.

The writer is among the number of those practitioners who have not seen mercury or potassium iodide help, but who have seen from their use great harm.

Later successes with chromium sulphate are chronic enlargement, hypertrophy of the prostate gland in old men. A symptomatic cure is usually

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achieved in a few months. The patient becomes able to retain and void a pint of urine. The frequent impulses to urinate and the recurring desire at night, cease. The patient enjoys either an undisturbed sleep or is awakened not more than once, and that toward morning. That the aged sufferer passes his nights like in the days of his prime from the taking of chromium, is the reason of the claim for a symptomatic cure. Where residual urine has been daily drawn with a catheter; where retention and paralysis demand its repeated introduction; where no urine flows unless through the instrument, the chromium does away with this labor and danger. So uniform have been the good results from chromium in this infirmity that the absence of good effects after a reasonable time of administration excludes hypertrophy of the prostate from the diagnosis, and directs the investigator to the thought of calculus, new growths, carcinoma, and papilloma.

The cystitis which accompanies this disease or has been inoculated by the use of instruments, is not benefited by this treatment, but requires the use of the oil of sandal-wood, which is further an aid to chromium.

Successes with this salt in prostratic enlargements have been had in men of ninety years.

Chromium retards the growth and reduces the size of uterine fibroid tumors. Most striking results are apparent in young women.

The writer has observed a shrinking of two-thirds of its former volume of an interstitial fibroid in a woman of thirty-four years. The growth of the tumor had been so rapid that surgical removal of it had been strongly advised by sincere and competent operators.

The number of cases treated with chromium is small, and none were of large size or long existence. The good results, however, have been so pronounced that further trials are earnestly recommended.

Herpes preputialis occurs in young and in old men, single and married. It may reappear with more or less regularity of time for years. Its etiology has not been discovered. While herpes preputialis is trivial in its nature and insignificant to the resolute, to the neurotic and timid it causes much fear of disease and distress of mind.

Self-limited and transient, the eruption needs no treatment; the relapses alone are worthy of our attention.

It becomes evident to an observer that their frequency depends on the physical debility of the subject and the apprehension and dread he displays in awaiting a new eruption. Or is he ever disappointed when he feels that the herpes is sure to come back!

Chromium cures these recurrences with absolute uniformity. A fair number of obstinate cases have been known to remain well for periods of one to three years. These patients are anxious and zealous in pursuing the treatment, the more so when other remedies have been long used without effect.

Of herpes progenitalis, the same cutaneous lesion in both sexes, no particular statement is made, as the writer's cases were all in males.

These observations on the therapeutics of chromium, although carried on for a long time and applied in the treatment of many cases, are yet incomplete

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and imperfect in that they lack any information of the action of the substance as ascertainable by pathological and histological changes of a retrograde or absorptive effect. That it mitigates the symptoms and seems to cure fibroid growth and hyperplasia has been only apparent, in so far that absorption seems to be promoted and with it obstructive and pressure symptoms abrogated. Material has as yet been completely lacking for autopsic study. The same is true of that most common of the chronic diseases of the cerebro-spinal system—locomotor ataxia. For these studies opportunity is wanted, and as the writer hopes may engage the attention of others more qualified than he to determine if these empirical uses of chromium may not be proven to be true by the unquestionable researches of the pathological anatomist.

The Therapeutics of Diseases Which Involve the Internal Secretions

THE MEDICINAL TREATMENT OF TUBERCULOSIS AS INTERPRETED BY SAJOUS.

By J. MADISON TAYLOR, A.B., M.D.

PHILADELPHIA.

WHAT has the profession of medicine accomplished in the prevention and cure of tuberculosis? One thing at least is accepted, viz.: that the infection is readily controlled, up to a certain point, by rational measures, directed to strengthening the body, by three cardinal agencies, open-air life night and day, forced feeding, and rest. Diagnosis must be prompt and treatment carried out consistently and persistently. The element of optimistic suggestion contributes largely to the desired results.

It will be obvious, however, that it is not always possible to provide all the conditions essential for full success. Hence the problem of the infected individual becomes similar to that met before these encouraging, often utopian, facts were known. The factors, among others, are variants in co-operation, in willingness or in appreciation of the *status quo* by the patient. Admitting, then, the largest potentialities along the line of improved nutrition, perfected metabolism, etc., there yet remains much for the thoughtful physician to do by the use of close personal attention to those deeper problems involved in the judicious regulation and enhancement of the auto-protective forces, rendered possible by appreciating the efficacy of drugs, understanding the precise manner of their action, and applying them to the varied states induced by the pathologic processes presenting, with timeliness and precision.

Whatever the lines of belief in pharmacotherapy one may hold, it will be generally admitted that it is a limited conception of duty for a physician to repudiate the power which resides in a judicious use of those agencies which

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are known, by all the laws of evidence, to expedite, to amplify and conserve, even the best effects of diet and hygiene, when confronted with a person infected by the tubercle bacillus or the mixed infections.

There often are present difficulties so great that we cannot rely wholly on the so-called rational or hygienic agencies. The disease may be advancing too rapidly, the individual may be unprovided with enough vitality, the circulation be too profoundly depressed, arterioles dilated, the exhaustion extreme, etc. Moreover, these diverse personal factors may depend upon grave original organic defects, many of them incapable of exact estimation. Cures (always a relative term) may be far more apparent than real, in truth mere cessation of activity of the morbid process, whether single or complex.

Is it not in accord with our conceptions of therapeutic possibility to so amplify organic integrity through the judicious use of drugs that a greater, more permanent readjustment of the factors of functionation shall be raised to, and remain on, a higher plane? It is within the experience of all that occasionally a tubercular individual after recovery becomes not only as well as before, but a far more powerful, enduring, efficient individual.

Is this merely an escape from a very direct and definite peril? Rather may it not be that the means employed by a series of fortuitous circumstances really contributed to the development of latent powers, and to such a degree as to induce a greater invigoration?

When we review in our minds the multiplicity of organic defects which one person, tubercular or not, may conceal, does it not open up an encouraging realm of endeavor to search out and correct these shortcomings? And how can, for example, defects in arterial tension, so significant as a health problem, be remedied so surely as by the proper application of stimuli to vaso-tonus?

Impressed by the breadth of the subject of disease in relation to the inherent powers of the body to regulate itself, or to be wisely regulated, Sajous has enunciated one cardinal principle involved in the problems of infection by tuberculosis, viz.: that the endotoxin of the specific pathogenic organism, Koch's bacillus, not only does not induce a reaction of the adrenal system (owing to its identity as a normal component part of the tissues—phosphorus), but that it also generates a virulent poison which seriously depresses the essential regulative mechanism. The ravages of the bacillus and its toxins, as he explains it, proceed unhindered until a helpful secondary infection occurs by *exciting a protective reaction in the test-organ* whereby the paralyzing effects of the tubercular poison are nullified by *awakening the full conservation of energy in the adrenal system.* This may be, and usually is, however, too late to arrest the destructive effects.

The indication, then, is promptly to administer agents which are capable of stimulating the test-organ, arousing the defensive properties of the adrenal system, and to a degree capable of destroying the germ and the endotoxin.

Spontaneous cure may, and does occur under favorable conditions, but then the process is essentially local, encapsulation walling off the infection. Sajous has submitted ample evidence to show that the tubercle bacillus is rich

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in nucleo-proteid—a body rich in phosphorus. The endotoxin of the tubercle bacillus, owing to its contained phosphorus, supplies a potent intermediary for the destruction of the germ itself when it penetrates the arterial blood. This is due again to the adrenoxidase in the plasma. The germ is attacked at once in the blood-stream, because of the marked affinity of phosphorus for oxygen. The tubercle bacillus rapidly proliferates in the lymphatics and glands, a result which it is important to prevent, by causing its rapid destruction in the blood-stream. The object to be attained, therefore, is twofold (1) to secure the destruction of the germs and (2) to prevent their proliferation in lymphatic vessels and glands.

Hence measures are indicated, as Sajous teaches, to *increase the functional activity of the adrenal system, thereby augmenting the oxygenizing power of the blood* (adrenoxidase). This aids the destruction of the tissue-bacilli, hastening local repair; it also expedites the production of auto-antitoxin and of phagocytes, both in the blood in the lymphatics. The remedies at our disposal for this purpose, are numerous. Thus:—

Iodine stimulates the test-organ and through it increases adrenoxidase, auto-antitoxin and thyroidase, promoting leucocytosis (phagocytosis), and also renders the bacilli more vulnerable by sensitizing them in the plasma. Potassium iodide may be used, gr. v, well diluted, being given after meals, and increased by two grains every other day. This may develop a slight febrile reaction with freer expectoration and definiteness in the physical signs—all favorable indications. If these signs fail to appear the dose should be gradually increased till they do. If reaction still fails by a week or ten days, add iodine in some other form or by inunction. If the remedy is not well borne or no progress made, it is well to give more vigorous drugs, as dessicated thyroid or mercury. Individuals whose vital processes are decidedly hypoactive, *e.g.*, those with pallor of the mucous membranes, especially of the soft palate and uvula, are especially benefited by thyroid extract.

Mercurials are powerful stimulants of the adrenal system, small tonic doses being well known to act beneficially. Mercury biniodid, gr. $\frac{1}{16}$, *t.i.d.*, is the form to be preferred.

Creasote is a valuable remedy in the earlier stages of tuberculosis (unless there be asthenia) because of its stimulating effect upon the test-organ, increasing the volume of auto-antitoxin in the blood and at the same time depressing the sympathetic centers. The effect is dilatation of the arterioles, admitting an excess of auto-antitoxin-laden blood into all capillaries, especially into those of the diseased areas, thereby hastening the curative process. The carbonate of creasote is best tolerated by the stomach, given in the middle of a meal, in capsules, increased gradually from 5 to 40 drops.

These effects are enhanced by also giving thyroid extract. Both are suitable for asthenic cases.

The effects of *strychnine* are similar to those of creasote, but produced by a different mechanism, stimulating the test-organ and increasing the proportion of auto-antitoxin in the blood. It excites the vasomotor center, and by provoking constriction of *all* arteries, throws a volume of blood rich in auto-

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antitoxin into the capillaries, including those of the diseased areas. The dose should be very small at first, gradually increased till the physiologic effects are well marked. Strychnine should *not* be given with creasote since it antagonizes its effects on the vascular centers.

Digitalis is well known to be beneficial in asthenic cases, especially where the heart is dilated owing to hypoactivity of the adrenal system.

Tuberculin at first depresses the test-organ, provoking a fall of the opsonic index, which lasts from a few hours to two weeks. The general adynamia appearing during the first and second stages shows that tissue metabolism was defective from the outset. When successive doses of tuberculin are given the blood is too poor in oxygen to carry on catabolism, the waste products of various sorts accumulate in the blood. There is thus induced a pseudo-pyæmia or septicæmia, which cause the adrenal defenses to react more or less actively, *e.g.*, by the febrile process. The blood is then supplied with auto-antitoxin and the opsonic index rises, encouraging the destruction of the toxins and wastes along with tubercle bacilli.

It will be seen that reason for the hurtful effects of too much tuberculin is due to the fact that the functional activity of the test-organ especially, and of all the defensive organs, is lowered by it to such a degree that the protective mechanisms cannot then react. This is Wright's "negative phase."

Tuberculosis tends to impair the alkalinity of the blood, and it is essential to sustain this up to normal, otherwise the auto-protective functions of the body fail. When all conditions for osmosis are maintained the bacteria are carried rapidly into the blood-stream and subjected to destructive action. When alkalinity is impaired, the lymph-circulation is more torpid and bacteria are retained. Hence salt, sodium chloride, should be used freely, added to food and drink, *e.g.*, milk. When fever is present the patient should be urged to drink freely of physiologic salt solution, eight ounces every four hours.

Cough is primarily a protective phenomenon, but may become a vicious, exhausting habit. It is well to encourage the effects of cough, the expulsion of germ-laden sputum, necrotic detritus, mucus, etc. Opiates to stop cough cause constriction of arterioles, hence they reduce the volume of blood-carrying destructive agents to bacteria. When the cause of cough is excessive viscidity of the bronchial secretions, it is lessened by the use of alkaline fluids.

This accumulation is most distressing in the early morning, and if it can be expelled fully, the day is passed more comfortably. Posture, according to Sajous, will materially assist its expulsion. By lying on the more normal side and hanging the head down over the side of the bed, the act of coughing is aided by gravity. After the first good effort the patient should rinse out the mouth and drink a glassful of hot water containing twenty drops of aromatic spirits of ammonia. A feeling of warmth ensues along with a desire to cough, and the patient can then expel loosened sputum laden with muco-purulent materials. At bedtime this may be repeated advantageously.

The useless cough based on the mistaken notion that something must be got rid of, can be materially curtailed, often wholly cured, by suggestion, careful, kindly explanations and dominant recommendations. At bedtime, after

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clearing the respiratory tract as described, a dose of bromide for two or three successive nights is often salutary. Bromides in small doses depress blood-pressure, the laryngeal vessels are then depleted and relief afforded to the congested sensory terminals. Oil of sandal-wood, 5 grains (or .3 gm.), *t.i.d.*, or fluidextract of hydrastis canadensis, 20 drops in water after meals, are useful to relieve obstinate cough, acting as stimulants and aid the curative process.

Hæmoptysis, blood-spitting, is preventable by the use of thyroid extract and iodine preparations, since, by stimulating the adrenal system, they increase the proportion of adrenoxidase, which is the fibrin or coagulating ferment, as Sajous has shown in the case of hæmophilics. To control free hæmorrhages it is essential to ignore temporarily the tubercular process and promote contraction of the arterioles, for which purpose morphine, gr. ¼ or ½, hypodermically, is most efficacious—never with atropine, however, as this drug increases the propulsive action of the arterioles. The fall in blood-pressure to meet the perilous exigency can be well supplemented by veratrum viride, 5 drops every hour for three hours, then once every three hours. So also sodium bromide and chloral hydrate, of each, gr. v or gr. x.

Auxiliary measures are also indicated; the semi-prone or semi-dependent position; cold compresses to the nape of the neck to induce reflex sympathetic constriction of the arterioles; a bandage around one or more limbs; absolute rest and quiet for some hours, and reassurance, assist greatly the curative process.

All these remedial resources do not preclude the out-of-door and other familiar measures now generally employed; they greatly increase their efficacy. The salient feature of success, however, according to Sajous, is the *intelligent* use of each remedy and his demonstration of the true physiological action of drugs.[1]

Editorial

SYMPTOMATOLOGY AND TREATMENT OF GONORRHOEA.

THE confusion still existing in the minds of so many as to the best measures to pursue in the routine treatment of acute gonorrhœa, constitutes the chief apology which the writer has to offer in presenting it as a subject for this editorial. The first problem confronting the physician undertaking the treatment of a case seen sufficiently early, is the possibility of aborting the attack. The hope that some safe and sure method of successfully aborting the disease might be attained has, up to the present time, never been realized.

The space allotted to this article will not allow of the writer's going at any length into a description of the more or less strenuous efforts that have been put forth in the past by the profession in the vain hope of accomplishing this

[1] Sajous: "Internal Secretions and the Principles of Medicine," Vol. II, p. 1113, 1907.

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object. None has proved absolutely reliable, and many have resulted in untold damage to the urethral mucous membrane. The various synthetic silver compounds placed before the profession in the last few years, seem to offer a reasonable chance of aborting the disease in cases seen early enough, but the attack is, as a rule, well under way by the time the physician first sees it.

Concerning the treatment of acute gonorrhœa, the writer frankly confesses that he has nothing new nor startling to offer.

At the outset, if ardor urinæ and chordee are troublesome symptoms, the patient is given some alkaline diuretic mixture containing fairly large doses of bromide of soda. As regards local treatment, directed to the destruction of the gonococcus, the following local treatment is advised:—

Two solutions are ordered—one containing potass. permang. 1:8000, the other a solution of some one of the silver salts. The patient is instructed to gently wash out the anterior urethra with an ordinary hand syringe full of the permanganate solution, repeating the process six times. After so doing one syringeful of the silver solution is injected into the urethra and held in for ten minutes. This treatment should be employed three times daily for the first four days, at which time the strength of the permanganate solution should be increased to 1:4000. In the stationary stage of the disease—*i.e.*, about the end of the second week—the use of the permanganate solution can be discontinued, the patient being instructed to use the silver solution night and morning, and twice during the day one syringeful of the following:—

℞ Bismuth subcarb. ..... ʒij.
Colorless hydrastis ..... ℥ss.
Boroglyceride ..... ʒij.
Aq. dest., q. s. ..... ʒiv.

In cases where the mucous discharge persists after four weeks, the use of the following formula, two or three times daily, will eventually bring about a cure in most cases:—

℞ Zinc sulph.,
Pulverized alum, of each ..... gr. xij.
Liq. hydrastis, colorless ..... ℥ss.
Aq. dest., q. s. ..... ʒiv.

Ordinarily in cases where there is little or no urinary frequency and only the two-glass test reveals the presence of a total urethritis, local treatment in the form of irrigations or deep instillations should be early employed. In nervous patients where the cut-off muscle fails to relax, or where the distention of the urethra produced by irrigation from the meatus causes considerable pain, it is much better to irrigate the deep urethra by means of a small caliber soft-rubber catheter. The most satisfactory line of treatment employed by the writer for some time consists in daily irrigations of the deep urethra with solutions of potass. permang. 1:6000, followed by instillations with a Keyes-Ultzman syringe of a silver solution, which should be held in the urethra as long as possible. This line of treatment should be employed every day if possible, until

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such time as the urinary frequency diminishes and the second portion of urine passed becomes clear. The use of hand injections by the patient should be discontinued temporarily during the period in which the posterior urethra is involved. This is a most important point and one very often overlooked. When the two-glass test shows that the posterior urethra is free from disease, any of the astringent hand injections mentioned above can be employed.

The above constitutes in brief an outline of the routine treatment pursued by the writer for some years past in cases of specific urethritis. No brilliant results have been obtained, the majority of cases requiring from six to eight weeks to accomplish a perfect cure, which, from the writer's point of view, may be considered fairly satisfactory.

H. M. CHRISTIAN.

Cyclopædia of Current Literature

ACIDITY OF THE URINE.

For some years the French have alleged to have obtained very marked success in the treatment of certain diseases by the administration of the various combinations of phosphorus, which are selected according to the degree of the acidity of the urine. The treatment is based upon the assumption that the blood is a definitely acid fluid, and that the reaction of the urine is an index to the state of the blood. The so-called alkalinity of the blood is due to the presence of the bicarbonates, which are acid salts. The acidity of the blood is mainly due to the presence of acid phosphates, but their acid reaction to litmus is masked, owing to excess of the bicarbonates, which turn red litmus blue. The estimation of the acidity of the urine per liter is carried out by Boussingault's method of tritration with a standardized solution of calcium sucrate. The end reaction is indicated by the appearance of a faint haze, which is caused by the precipitation of tricalcium phosphate. This method does not estimate the total quantity of acids present, but it presents the power which the urine has of dissolving tricalcium phosphate, which latter is the physiological acidity, the practical medical acidity.

It is important that patients suffering from a loss of phosphates should take a diet rich in these salts. As regards drugs, phosphoric acid and its salts, according to the degree of acidity of the urine, are all useful. The diseases most amenable to this treatment are neurasthenia, chronic arthritis, diabetes mellitus, chronic eczema, psoriasis, fermentative dyspepsia, and gout. F. A. Watkins (Lancet, June 20, 1908).

BRONCHITIS AND ASTHMA, BREATHING EXERCISES IN CURE OF.

Success in the cure of chronic bronchitis has been obtained by the writer by systematic courses of deep breathing. The exercises are done with the trunk bare, before a large mirror, inspiring through the nose and expiring through the mouth. Some persons breathe too superficially or they contract the abdominal muscles during inspiration. This latter bad habit can be one of the

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factors in bronchitis and asthma, and it must be combated and the patients taught to breathe properly and not to cough except to expel the secretions. These exercises in deep breathing improve the general health to a remarkable extent and cure chronic constipation, and regulate the circulation until the patient says that he "feels like a new man." The writer affirms that systematically practiced, deeper breathing is not only the most certain expectorant, but also the only one that is entirely harmless. The only drawback is a slight dizziness sometimes noticed at first, evidently a sign of anæmia of the brain, but it occurs only at first. No other system except that of locomotion is so much under the control of the will as the respiratory system, and he believes that respiratory therapy promises good results in many morbid conditions in heart- and blood-vessels, skin and nervous system, and in metabolic disturbances. H. E. Knopf (Berliner klinische Wochenschrift, June 22, 1908; Journal of the American Medical Association, July 25, 1908).

CANCER PROBLEM.

The writer discusses the history of various views as to the nature of cancer; that it is due to local inflammation, to heredity, to embryonal remains, to traumatism. These have all been found absolutely unsatisfactory and should be discarded. The intrinsic theory, which attributes it to cellular action, fails to explain the essential features. The writer insists that cancer and the so-called cancer cells are to be explained on the theory of some extrinsic cause. He insists on a parasitic theory. He refers to its much greater prevalence among women, and insists that there is a real and not a seeming increase in cancer. In Buffalo every house in which cancer deaths have occurred is noted, and it is found that in numerous instances several deaths from cancer have occurred in the same house. The author insists that the disease is actually contagious, in evidence of which he notes such instances as the development of cancer along the tract of a trocar that has accidentally wounded a cancerous liver in paracentesis for ascites, and linear scar cancers, when a knife that has touched cancer tissue is used in healthy parts. Transmission takes place in surfaces constantly in contact. He refers to inoculation experiments, especially those at the Butler Laboratory. There is absolutely no special carcinoma cell, he asserts; the parasites of cancer seem to be practically omnipresent. He enumerates the possible courses of transmission through contact with neighbors. The very term metastasis implies that some infectious element is transported from one part of the body to another. The theory by which the cancer cell is erected into being its own parasite is far more revolutionary, and taxes the imagination far more than the theory which seeks to find the explanation in some extrinsic agent and which is already receiving such striking corroboration from both clinical experience and the experimental laboratory.

Cancer begins as a result of local conditions. It may be that there are several organisms capable of producing it. Cancer, with all its local characteristics and its fatal termination, is a disease without a symptomatology of its own. The finding of a tumor is the first sign, in cancer of the stomach, for instance, not a symptom. The symptoms are not distinctive of cancer. R. Park (American Journal of Surgery, May, 1908).

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CONVALESCENCE.

In the early convalescent period from any disease in which the case has almost terminated fatally, when death seems imminent from heart failure, and when free stimulation from drugs has been made and the patient gains resistance very slowly, the muscles being lax and flabby and unable to perform their duty in aiding the heart to send out the normal diastolic wave, nothing in the materia medica will act so promptly as judicious and properly applied hydrotherapy. Cold through the peripheral nerve terminals is refreshing because the stimulus is conveyed to the central nervous system by means of the shock and thence reflected by the nerve centers governing them to the functions of respiration, circulation, etc. Affusions are most applicable because of the flexibility of temperature, duration, and pressure. The writer describes the method of application to the trunk of cold compresses at night, and a method of ablution when patients are too weak to be handled. The reactive capacity of the patient must be studied to establish his ability to withstand the proper gradation of cold. This may be obtained by passing the back of the nail of the forefinger of the right hand across the abdomen or chest and increasing the pressure on the second stroke made parallel to the first. According to the deep reddening of the skin and the celerity of the blood in following the nail, after a little practice the reactive capacity of the patient may be readily judged. The shock of the cold is always conveyed to the central nervous system and thence reflected to the three chief blood-pressures: *(a)* the pressure behind the column—the heart; *(b)* the pressure on the sides of the column—the muscular coats of the arteries and the elastic fibers of the arterioles, and *(c)* the pressure in front of the column—the normal elasticity of the capillaries. In this manner is blood-pressure maintained. W. P. Worster (Medical Record, June 5, 1908).

DYSMENORRHŒA.

Dysmenorrhœa accompanied by labor-like pain is often due to a form of membranous dysmenorrhœa, and the shreds of tissue passed are often extremely small, but this does not prevent them from causing marked obstruction symptoms. A histological study of the shreds show an inflammation present, even though no evidence of infection can be noted in the case clinically. The passage of shreds, if the cervix is a multiparous one, is not necessarily accompanied by pain.

The writer has attained best results from dilatation and curettage followed by the insertion of a Wylie's drain, together with tonics and improved hygiene, and under this treatment sterility may often be overcome. C. C. Norris (University of Pennsylvania Medical Bulletin, June, 1908).

ENDARTERITIS, OBLITERATING.

The problem of ameliorating the sufferings of bad cases of erythromelalgia is a difficult one. Elevation of the limb and the enforcement of absolute rest to the part seem to offer the greatest chance of relief. The question of when surgical interference should be practiced is one of great difficulty. It seems impossible to determine when an obliteration of vessels, such as is known to take place in erythromelalgia, will have attained sufficient severity to demand amputation. Certainly obliteration of pulsation in the dorsalis pedis vessels is not a condition which indicates it. The sufferings of

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these patients occasionally justify such radical measures. Ultra-conservatism should characterize the treatment of these cases by the surgeon, but he should be ready to interfere when the conditions demand it. In angina cruris, where static disturbances exist, they should be alleviated, but the most benefit will follow vibratory massage and all those measures which are designed to overcome the hunger of the muscles for an adequate blood-supply. The gangrenous conditions which result from extreme degrees of arteriosclerosis, whether senile or syphilitic, must be managed by following out all procedures which lessen resistance to the flow of blood, and having determined the limits of variability of tissue supplied by the obliterated artery, the surgeon must remove these parts, where the circumstances call for it, and the patient is in a proper state to withstand it. C. F. Painter (Boston Medical and Surgical Journal, July 16, 1908).

ERYSIPELAS, MAGNESIUM SULPHATE SOLUTION IN.

The writer reports the good results obtained at the Philadelphia General Hospital in 19 exceptionally severe or complicated cases of erysipelatous infection. In 35 uncomplicated cases all patients recovered in from two to seven days, the pain and local discomfort being relieved in a few hours. No other treatment was given. The application consists of a saturated solution of magnesium sulphate in water. This is applied in facial cases on a mask consisting of from fifteen to twenty thicknesses of ordinary gauze, of sufficient size to extend well beyond the area involved, a small opening being made to permit breathing; no opening, however, is cut for the eyes. The mask is then thoroughly saturated with the solution, applied and covered with oiled silk or wax paper, and wetted as often as necessary to assure a moist dressing—usually once in two hours, depending on the time of year or the temperature of the room. The dressing should not be removed oftener than once in twelve hours, to permit an inspection of the parts, and then should be immediately reapplied; the infected area should not be washed while the treatment is employed. H. Tucker (Therapeutic Gazette, June 15, 1908).

GOITER IN THE NEWBORN.

One hundred and thirty cases have been found on record by the authors. The symptoms are practically the same as in adults, and section of the isthmus or exothyropexy gives good results. These technics not only relieve the the threatening compression of the air-passages, but lead to the retrogression of the goiter. An inherited tendency to goiter was observed in a number of cases; preventive treatment should always be instituted; this includes good general hygiene, iodides, etc., when a woman with goiter or with goitrous children becomes pregnant. The newly born baby should be given medical treatment. If, notwithstanding the attempts to relieve the congestion in the thyroid, the child still has difficulty in breathing, or if there is danger of suffocation, the surgeon should be summoned. Tracheotomy should never be considered. The goiter may appear as a severe or mild affection or fulminating, but the mild form is by far the most frequent. In the cases on record syphilis among the parents was scarcely ever noted, and no signs of syphilis could be found in the children later. The drinking water taken by the mother may be responsible

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for the goiter, although predisposing causes may be provided by persistence of the fœtal circulation, compression during delivery, and congestion from screaming or writhing. J. Fabre and L. Thévenot (Revue de Chirurgie, June 10, 1908; Journal of the American Medical Association, July 18, 1908).

GOUT, PATHOGENESIS.

Arguments are presented by the author to prove that gout is the result of perverted functioning of the lymph-producing apparatus. The consequence is disturbance in the metabolism, especially in that of nuclein. He explains the acute attack as an accident intercurrent in the slow, chronic development of tophi. It is distinguished from acute articular rheumatism by its special site and by the more intense participation of the soft parts in the inflammatory process. The prodrome, the general symptoms and nitrogen metabolism show that there is toxigenic destruction of albumin, as in any acute infectious disease. The presence of uric acid gives the inflammation its specific character. The big toe has the most weight to bear and it is farther from the heart than any other joint, which favors the deposit of urates, while it is particularly exposed to trauma and constant pressure. The urates are deposited where the circulation is most sluggish, and thus prepare the soil for the joint lesion, so that gout affects predominantly the smaller, remote joints while acute articular rheumatism settles in the larger joints. He regards the perverted functioning of the lymph-producing organs as a congenital anomaly. The acute attack of gout is not a necessary effect, but an episode favored by the uric acid diathesis. T. Silvestri (Gazzetta degli Ospedali e delle Cliniche, May 31, 1908; Journal of the American Medical Association, July 18, 1908).

KERATITIS IN SYPHILIS.

Diffuse interstitial keratitis may occur as a result of acquired syphilis. It usually occurs as a late secondary sign of the disease or during relapses in the tertiary stage of the general disease. Stephenson gives the average time of development of interstitial keratitis as 10.8 years after the primary sore. Loewinson has reported one case as early as three weeks after the appearance of a primary sore, while Ellett reports a case appearing as late as twenty-five years after the infection. It almost invariably affects but one eye, although there are a few exceptions reported where both eyes were affected. It runs a quicker and lighter course, as a rule, than the cases due to inherited syphilis, and is rarely harmful to the sight. It should be remembered, however, that Griffith has reported one case in which the sight was entirely lost. Truly, salmon-patches occur but seldom in these cases.

It is difficult to make a clinical diagnosis between the syphilitic and the tuberculous forms of the disease, and even a differential pathologic diagnosis is not always conclusive. The prognosis is favorable, though it should be somewhat guarded from the fact that sight has been lost entirely in one case. A. E. Davis (Journal of the American Medical Association, July 25, 1908).

LARYNGEAL TUBERCULOSIS.

Laryngeal complications are present in many cases of pulmonary tuberculosis. They may begin as simple catarrhal trouble, but as soon as the mucous membrane is abraded infection may take place. If the condition is discovered in

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its initial stage it is often possible to prevent extension of the local lesion.

The protective and curative treatment which is advocated consists in (1) rest for the larynx, (2) inhalations. The great value of rest has been observed in cases in which tracheotomy has been performed. Surgical measures are not highly approved of. Curettage is occasionally useful, œdema may be relieved by puncture or incision. Punching and excision of tissue are seldom desirable. Applications of lactic acid, orthoform, morphine, and iodoform are often useful. The best results, in the author's experience, have been obtained by means of a perfected zinc mask in the interior of which is a small sponge. This sponge is moistened with a mixture of equal parts of creosote, alcohol, and chloroform, is worn constantly except at meals, relieves cough and pain, and very often mitigates a most distressing condition. B. Robinson (American Journal Medical Sciences, August, 1908).

MALARIA, COMATOSE PERNICIOUS.

This most frequent of the pernicious forms of malarial disease is described by the writer, and he reports three cases, all fatal, occurring in Missouri. Its early diagnosis is important because of the effect of prompt treatment on the mortality. In the great majority of cases it is due to the estivo-autumnal parasite, the development of coma depending on the number and toxicity of the parasites, and especially on their localization in the brain. In temperate climates it usually occurs in the summer, in the tropics, at any season, and it usually occurs in those who have suffered for some time with malaria and have not received proper treatment. Its pathology in general is about that of other severe types of malaria, the most striking and characteristic lesion is the blocking of the cerebral capillaries by thrombi of malarial parasites, with secondary minute hæmorrhages, and pigmentation. There is usually relaxation of the limbs, but there may also be twitchings of muscles, exaggerated deep reflexes, and even convulsions. Fœcal symptoms of brain disease may continue after the attack. With a previous history, diagnosis sometimes may be made from the symptoms alone, but if the patient is found comatose and history is lacking, a blood-examination will be needed. The prognosis is always grave. Quinine should be given hypodermically. Craig thinks that 8 grains of the hydrochlorate, repeated until 24 grains have been injected, is enough in most cases, but admits that more may be required in very severe infections. The intravenous injection method may be used in the presence of very grave symptoms. Aside from the quinine, treatment must be symptomatic. Stimulants, especially strychnine, are often useful. C. S. Neer (Journal of the American Medical Association, June 6, 1908).

MIGRAINE AND THE EYES.

There are three ocular conditions conceivably concerned with attacks of migraine: 1. Over-use of ciliary muscle in accommodation. 2. Conditions rendering binocular vision impossible without undue strain of extrinsic muscles. 3. The cerebral fatigue consequent on constant interpretation of distorted or unequal retinal images. The one great defect in the evidence of the relation between these conditions is the widespread failure of ocular therapeutics to afford relief, even when applied by men whose reputations are of the highest. This may be due to two causes: First, that the ocular treatment

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is seldom as patient and painstaking as it should be, and second, because there may be cases in which eyestrain is not the chief cause and perhaps not a cause at all. The writer believes both to be true. He holds that a thorough examination of the eyes should be made in every case, not only once, but several times, by different men if the first is not successful. E. M. Alger (New York Medical Journal, June 6, 1908).

PNEUMONIA IN INFANCY, DIAGNOSIS OF.

Pneumonia in infancy is a disease furnishing characteristic signs on which a diagnosis may be based before the lungs are examined. The symptoms are sudden onset, depression, rapid respiration with ratio to pulse of 1 to 3, fever, and usually cough. If with these are noticed flaring nostrils, pneumonic breathing, and expiratory grunt, a definite diagnosis may be made, while rigidity of the neck and upper extremities without rigidity of the lower extremities is an important confirmatory sign if present. Auscultation and percussion of the chest should be used in confirmation of the diagnosis and for localizing the lesion and for information as to its character. R. G. Freeman (Journal of the American Medical Association, July 25, 1908).

PREGNANCY, OCULAR COMPLICATIONS OF.

Apart from the various nervous symptoms incidental to pregnancy, which often affect the eye functions, there are four serious ocular manifestations seen more or less frequently during pregnancy or after parturition. These are: (1) The so-called uræmic blindness, which is usually seen in connection with eclampsia; (2) what has always been termed the albuminuric retinitis of pregnancy. These are the most common complications. Rarer forms are (3) loss of central or peripheral vision, due, so far as symptoms point, to a retrobulbar neuritis, and (4) a form of neuroretinitis, not essentially suggestive of the albuminuric type, but showing numerous retinal exudates and hæmorrhages.

The author reviews the clinical symptoms of these conditions and the classes are studied from the standpoint of recent pathological investigations in the obstetrical field. There is, in view of these investigations, doubt as to whether the term uræmic should be applied to the blindness occurring in connection with puerperal eclampsia. The same is true regarding the renal origin of what is termed the albuminuric retinitis of pregnancy. There is good reason to think that both the renal and ocular complications are manifestations of the same process—a toxæmia. The third and fourth varieties of ocular complications of pregnancy are also, doubtless, the results of pregnancy toxæmia, a toxic neuritis or toxic thrombosis probably being the active factor in causation. Hiram Woods (Journal of the American Medical Association, July 18, 1908).

RICKETS, ETIOLOGY OF.

The etiology of rickets has been studied by the writer, and he arrives at the following conclusions: Not one of the many theories which have been elaborated to explain the cause of rickets has been universally accepted, and they all lack, not only from the clinical, but also from the experimental, aspect, unequivocal proof. It is some error in feeding which, in England and America, is commonly believed to bring about the disease, but it is doubtful, however, if feeding plays an important part in the eti-

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ology of rickets. Experimentally it cannot be caused by improper feeding. By confining young dogs and depriving them of exercise rickets has invariably been induced, as in experiments detailed by the writer, and that although their diet was beyond suspicion, the air which they breathed pure, and their kennels were kept scrupulously clean, whereas control animals allowed exercise, but otherwise similarly treated, did not become affected. Examination of the conditions under which rachitic children are reared reveals one constant and invariable factor in their lives, namely, confinement. Alike, then, on clinical and experimental grounds, the writer concludes that confinement, with consequent lack of exercise, is the main factor in causing the disease. It is possible that there may be a toxin responsible for the immediate results, but without lack of exercise this toxin will not produce any injurious effects. L. Findlay (British Medical Journal, July 4, 1908).

SELF-REPAIR, THERAPEUTICS OF.

Numerous facts in biology justify the conception that the living organism represents a mechanism and is in many respects comparable to a complex human-made machine. The efficient repair of a mechanism justly presupposes a familiarity with its normal structures and construction, and also a complete understanding of the nature of the disorder. The actual extent of knowledge of the living machine, it must be admitted, is very small, and is only an infinitesimal fraction of that knowledge which would enable physicians to comprehend it as a competent engineer understands the human-made machine. While no man would be permitted to meddle with serious disorders of the human-made machine with only a fraction of knowledge of its conception, yet with the disorders of the mechanism of life for thousands of years millions of men have meddled, with a knowledge infinitesimally small indeed even when compared with the present understanding of the processes of life and their disorders. With just regard to therapeutics the living animal body ought not and could not be compared with an artificial machine. No machine has yet been invented which can automatically repair its own disorders, but the living organism is well provided with such automatic arrangements for self-repair.

Two methods of treatment competed in the past in the domain of internal medicine, the rational and the empirical, the former posessing only negative virtues, leading essentially to inactivity, the latter satisfying its followers by the activity which it inspired. Many ailments and diseases terminate spontaneously in recovery; therefore, it is evident that the animal organism must possess means and methods by which it accomplishes these recoveries. The writer fears that the study of immunity is not yet appreciated even by some of the leading pharmacologists. It is a good thing that the antitoxins were discovered; here is something which physiology cannot claim as its own and pathology has not yet laid hands on. Here is something which the body in its efforts at defense and repair evidently manufactures anew.

The present tendency in pathology is to consider every symptom as a manifestation of the efforts of the organism for defense and self-repair. All the signs of inflammation are considered as factors in self-repair. The various attempts to influence favorably the course of infectious diseases by the artificial production of leucocytosis is another

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venture to utilize therapeutically one of the methods of defense and self-repair employed by the body against inflammation. Fever is another which is now being tried by various investigators as a curative agent. The author refers to the experiments of Opie in which tuberculosis of the pleura and lungs of dogs is cured or greatly mitigated by the intrapleural injection of a sterile pus obtained from another animal. Learning the methods of Nature should not imply that they are to be followed blindly; on the contrary, they should be improved on. In studying self-repair Nature strives only to avoid death; the physician has an additional duty—to make life bearable. Among the new creations are mentioned the antitoxins, bacteriolysins, anti-endotoxins, agglutinins, precipitins and coagulins. S. J. Meltzer (Journal of the American Medical Association, June 13, 1908).

SYPHILIS, SURGICAL TREATMENT OF.

Experimental evidence has shown that syphilis is due to infection with spirocheta pallida, an organism which lingers for a short time at the seat of inoculation and then rapidly spreads through the body. This organism transmitted from parent to child is the cause of inherited syphilis. Many forms of arthritis formerly classed as syphilitic are due to other infective agents acting upon tissue modified by the action of the syphilitic virus. Syphilitic changes in the bones, joints, tongue, and other parts may occur as a result of inherited syphilis much later in life than is usually recognized. They are then the result of accidental causes, and they are often the only evidence of the inherited taint.

The modern treatment of syphilis consists *(a)* in the more careful administration of mercury, which is now given to cure the disease itself, and not merely to relieve the symptoms, as has hitherto been the case; *(b)* in a recognition of the limitations of the absorptive power of the iodides; *(c)* in a freer use of surgical methods to remove the products of syphilitic inflammation before the iodides are administered. D'Arcy Power (British Medical Journal, May 23, 1908).

TABES DORSALIS, PATHOGENESIS OF.

Tabes dorsalis is a secondary degeneration in the posterior columns, due to a chronic meningitis, very probably of syphilitic nature. The arrangement of the meninges surrounding the radicular nerve renders it peculiarly susceptible at that spot to mechanical or toxic injury. The unequal incidence of the affection upon different fibers of the posterior root is probably due to unascertained peculiarity of structure or arrangement of fasciculi, rather than to any selective toxic influence. The lesions tend toward resolution and arrest, even though the process may continue during the life of the individual. With this arrest, regeneration tends to occur in the radicular nerve, the amount in the anterior root being relatively considerable, while that in the posterior root is less in amount and functionally insignificant, as a rule. The otherwise inexplicable vasomotor and cranial nerve symptoms and post-mortem findings in this disease are shown thus to be necessary concomitants of the tabetic process. The question of the pathogenesis of the polyneuritic manifestations found in tabetics is not yet answered. T. A. Williams (American Journal Medical Sciences, August, 1908).

TACHYCARDIA, PAROXYSMAL.

Report of 4 cases of paroxysmal tachycardia which throw some light on

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this interesting condition. The writers regard it as a neurosis and not as due to organic changes in the heart, for in two of their cases there was no cardiac dilatation during the seizure, and in the other two dilatation supervened only after a long period of years, and must, therefore, have been secondary to the repeated attacks of tachycardia. The chief evidence in favor of its being a neurosis is the fact that it occurs in individuals who are neurotic themselves and often have a hereditary neuropathic disposition, and that the attacks themselves are accompanied by a great variety of nervous manifestations, especially affecting the vasomotor apparatus. One of their patients, for instance, during attacks showed a profuse eruption of vesicles symmetrically placed on the lower and upper extremities. Another frequently became unconscious at the beginning of the attack, and at the termination his face became very red and he suffered from great dizziness. Polyuria, hyperæsthesia of the neck, intestinal colic with diarrhœa, were other nervous manifestations seen in these cases. In only one of them could extra systoles either at the beginning or the end of the attack or in the interval be demonstrated. For the other three, there was no evidence in favor of the tachycardia being due to the interposition of extra systoles. The cause of the disease is assumed to lie in a temporarily increased irritability of the heart muscle. R. Bálint and K. Engel (Zeitschrift für klinische Medizin, B. lxv, Hft. 3 u. 4; Boston Medical and Surgical Journal, June 18, 1908).

THYMUS GLAND, FUNCTION OF.

The thymus may be a lymphatic gland, but it is so specialized as to be virtually something more; it is one of the series of glands which, by an internal secretion, regulate the various functions of the body. The gland is really an accessory one, for its function can be taken up by others. It is to be remarked that simultaneous extirpation of the spleen and thymus invariably ends in death. One would, therefore, infer that the spleen can carry on along with its other manifold functions, those of the temporary thymus. Extirpation of the thymus does not give rise to hypertrophy of adenoid tissue elsewhere. The function of the gland is temporary, for as growth advances the gland atrophies, though in man the gland never quite disappears till after puberty. There are cases on record, however, where there has been no thymus.

The thymus and the thyroid are closely associated developmentally, anatomically, physiologically, and pathologically. In two extirpations of the gland in the human subject the writer has found the thymus continuous with the left lobe of the thyroid. The results of experiments have shown that the thymus is unnecessary to the economy when the thyroid is gone, and when the thymus is removed less thyroid suffices. The importance of this relationship is apparent in certain diseases. Thus, there is a type of Graves's disease where extirpation of the thyroid is followed by sudden death, and on post-mortem examination the thymus is found enlarged. An enlarged thymus is credited, certainly rightly in some cases, with being the cause of death in the so-called status lymphaticus, and after removal of the thyroid the enlarged thymus gives rise to the same conditions as produce the so-called thymus death. Therefore, in such cases, where thyroidectomy was deemed necessary in Graves's disease, the writer would recommend that the thy-

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mus be first sought for, and if enlarged, be removed as a preliminary to thyroidectomy.

In certain other diseases, notably laryngismus stridulus, thymusectomy has given good results. The result of thymusectomy is not mechanical, but due to the removal of the internal secretion of the thymus. In this disease and in children subject to "kinks," thymusectomy offers some hope of cure. In cretins, thymusectomy, by reducing the necessity for thyroid secretion, will be beneficial and ought to be tried.

In children who present a fulness over the suprasternal notch during expiration, straining or coughing, especial care ought to be taken during surgical anæsthesia, which ought to be of the lightest possible. A. MacLennan (Glasgow Medical Journal, August, 1908).

TYPHOID FEVER.

The advantages of therapeutic fasting (not starvation) in typhoid fever, as illustrated by the record of 148 cases, are pointed out by the author. The battle-ground of treatment, he says, lies in the gastrointestinal tract; any vital organs containing pathognomonic lesions of an infectious disease need rest, and the aim should be to nourish the patient without increasing saprophytosis. The excessive nitrogenous waste in typhoid fever is not due to the typhoid toxin, but probably to mixed infections, and emaciation occurs independently of the amount of food taken and results more rapidly from toxæmia than from lack of nourishment. Therapeutic fasting allows an uncomplicated typhoid infection to pursue a normally mild course without any mixed infection, by reducing the bacterial content of the intestines. It is the severe and sthenic cases that are especially amenable in this treatment. In such cases fasting should be prescribed for from one to three days, though it is rarely advisable to continue it through the third day, as the severe symptoms are usually relieved by that time. In other than sthenic cases it is not often necessary. If pneumonia intervene, more liberal diet should be allowed. After fasting for from twenty-four to forty-eight hours, a very restricted diet of broths, etc., in prescribed amounts should be given. The writer does not favor a milk diet, as no one can tell that it will not form a curd which is worse than solid food. It is less liable to do so when diluted with from two to five parts of broths, hot water, etc., and may then be valuable. Gelatin is a valuable adjuvant in the dietary of typhoid; it adds to the relish of the various liquids, lessens the nitrogenous waste, and prevents hæmorrhage. He would use it as a routine in all cases, though in very aggravated diarrhœic cases, in which it is not well tolerated, only in small amounts on alternate days. Fasting and a restricted diet greatly enhance the effect of hydrotherapy, and frequently render the use of antipyretic measures needless. In the series of cases which form the basis of the paper, the low mortality (4.7 per cent. and only 4.4 per cent. in 144 whites) is ascribed largely to the dietetic management, though many had very inefficient nursing. R. M. Harbin (Journal of the American Medical Association, July 18, 1908).

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Clinical Lecture

TINEA FAVUS PILARIS.[1]

BY JOHN V. SHOEMAKER, M.D., LL.D.
PHILADELPHIA.

Professor of Materia Medica, Therapeutics, Clinical Medicine, and Diseases of the Skin, in the Medico-Chirurgical College and Hospital of Philadelphia.

GENTLEMEN: Here is a man, age 22 years, who came to this clinic to receive relief for an intense itching and crust formation on his scalp. This condition exists for over ten months with no amelioration in spite of treatment. There is nothing in his history that is of value to aid us in the diagnosis, except that he slept with a young man over a year ago who had a disease of the scalp; but he thinks it was different from what he suffers at present.

He is single; occupation, machinist. He has had the usual diseases of childhood, but has never been ill since he was a small boy. He also denies venereal diseases.

The disease began with areas of severe itching, the formation of small papules which readily turned into pustules. He claims that the pustules were always around the hairs, and when the pustules subsided the hairs came out, leaving these areas of baldness with the presence of small cicatrices. On close examination you will find that the bald areas show atrophy of the skin. The crusts present are cup-shaped, yellowish in color, and have a distinct mousy odor. One of these cup-shaped crusts was removed with a pair of forceps, powdered, fixed and stained on a glass slide. On examination of this slide under the high-power microscope, $\frac{1}{12}$ oil immersion lens, the presence of the fungus

[1] Delivered in the Clinical Amphitheatre Medico-Chirurgical Hospital.

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achorion Schönleinii was discovered. The fungus consisted of spores and mycelium.

Diagnosis.—Of course the microscopic examination confirmed our suspected diagnosis of tinea favus papillaris. The cup-shaped yellowish crust with a mousy odor, the bald areas with atrophied skin, and the presence of small cicatrices are all characteristic of favus.

Favus may be limited to the hairs and hair-follicles (tinea favosa pilaris), to the epidermis (tinea favosa epidermis), to the nails (tinea favosa unguium), or it may involve the entire surface and all the cutaneous appendages (tinea favosa universalis).

The most common form is tinea favosa pilaris, present in this patient, which may sometimes be confounded with tinea tonsurans and pustular eczema. A differential table, as placed on the blackboard, will clearly and readily point out the difference of these diseases, and assist in making a correct diagnosis:—

Tinea Favosa Pilaris.	*Tinea Tonsurans.*
1. Caused by the fungus achorion Schönleinii.	1. Caused by the vegetable parasite tinea trichophyton.
2. The crusts are dry, yellowish, friable, and cup-shaped.	2. The crusts are due to the exudative vesicles and pustules.
3. The hairs drop out of the follicles.	3. The hairs break off and look nibbled.
4. A musty odor is present.	4. No odor.
5. Chloroform does not affect the hair.	5. Chloroform turns the hair white in a few minutes.
6. Area affected is bald and atrophic with small scars.	6. Area affected looks stubbled by the broken-off hairs.

Tinea Favosa Pilaris.	*Pustulas Eczema.*
1. Caused by the vegetable parasite achorion Schönleinii.	1. Cause constitutional.
2. Crusts yellowish, dry, friable and cup-shaped.	2. Crusts brownish, due to exudation.
3. Hairs fall out of follicles.	3. Hair not affected.
4. Parts have a musty odor.	4. Parts have no odor.

Pathology.—In tinea favosa pilaris the parasite penetrates into the hair-follicles, and insinuates itself between the superficial cells of the corneous layer. It also attacks the inner and outer root sheaths of the hair, and may even invade the hair shaft. Obliteration of the hair-follicles and atrophy of the hair papillæ finally result from the continuous pressure of the parasitic growth. Various inflammatory and atrophic changes take place in the corium from the same cause. Suppuration and permanent cicatrices may or may not occur. The crusts are composed almost entirely of mycelium and spores of the achorion Schönleinii. The mycelium consists of narrow, flattened threads

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or tubes ramifying luxuriantly in all directions. They are pale-green or gray in color, and vary in diameter. There are two varieties of mycelial tubes or threads: those which are apparently empty, and those which are divided in small compartments containing numerous granules or young spores. The fully developed conidia or spores are round or oval bodies, varying in diameter and form. They are present in great numbers and are frequently massed in groups. Often forms intermediate between spores and mycelium are found.

Etiology.—The disease is caused by the growth of the achorion Schönleinii, a vegetable parasite, attacking the follicles and upper corneous layers of the epidermis.

The disease is contagious, yet, as in this case, it is often difficult to establish a history of direct contagion. What his friend had a year ago we do not know, but I think it is quite permissible to suspect that he had favus papillaris. In cases when absolutely no history of direct contagion can be established, it is possible that the spores and fungus are transmitted through the medium of the atmosphere. The disease is as common among the rich as among the poor, and at all ages. However, it seems that scrofulous children are more susceptible, and it is probable that a peculiar condition of the skin is necessary to its continued existence, filth being a predisposing factor. The disease is exceedingly common among the lower animals, especially so in cats, mice, and rabbits.

Treatment.—This patient constitutionally is apparently in perfect health, and since the disease is a local one he needs only local applications to destroy the germ producing the disease. To obtain successful results it requires persistent applications of some active parasiticide. Of course, the crusts must first be removed by applications of some oily substance. The oil of ergot, applied for at least twenty-four hours, answers this purpose splendidly. It softens and loosens the crusts and produces a mild astringent effect upon the epidermis. A 25-per-cent. solution of boroglyceride may follow the application of the oil of ergot to cleanse the affected areas and abstract the moisture which is so essential to the development of the fungus. The anti-parasitics *par* excellence in this affection are the oleates of copper and mercury in the form of a 5- to 10-per-cent. ointment. Applications should be made twice daily, well rubbed in with the tips of the fingers. No irritation will result, and, as a rule, there will be a speedy disappearance of the fungus.

Bichloride is probably the best parasiticide, but in favus it coagulates the albumin of the epidermis, forming a protective layer of mercuric albuminate over the follicles, beneath which the parasite may live in security and thrive.

The use of water to cleanse the scalp is interdicted, since it invariably increases the activity of the parasite. Solutions of boric acid in oil, ether, alcohol, or glycerine are better substances to cleanse the parts.

To ascertain whether the disease is cured, single hairs should be extracted and examined under the microscope for the presence of the parasite.

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Original Articles

REPORT OF A CASE OF IODISM.

By HERBERT J. SMITH, Ph.G., M.D.

Lecturer on and Instructor in Applied Therapeutics Medico-Chirurgical College; Assistant Visiting Physician Medico-Chirurgical Hospital; Assistant Dermatologist to the Philadelphia General Hospital.

A. W., age 22 years; born in United States; occupation, clerk in general store.

First visit May 26, 1908. Complaining of severe frontal headache, inability to sleep, feeling of nervous dread, loss of memory, unable to correctly add a column of figures, great mental depression, general lassitude, loss of appetite, nausea, abdominal pains, diarrhœa, excessive salivary and nasal secretions, burning sore throat, and numerous small boils over the body.

The following history was obtained only by careful questions put during several visits to my office. At first the only statement the patient would make was that he was suffering from syphilis, and was sent to me to be cured, saying he had not so far been treated.

During the early part of March, 1908, he in company with a young man of his own age, visited Philadelphia, and had a good time in dissipation, exposing himself to venereal infection; his companion contracted gonorrhœa, and he, the next morning, noticed a small abrasion on his penis which was annoying for several days. Upon his friend confiding to him about this time the fact of his having a discharge, he immediately became frightened into the belief that he had contracted syphilis, concluding to accept treatment from his friend who was learned in the use of drugs, being a clerk of two years' experience in a country drug store, and apparently being successful in the treatment of his own case.

He was given some small yellow pills to take, one four times a day; later it was found that these pills were yellow iodide of mercury, ⅓ grain each. Continued taking same for two weeks, and was just beginning to congratulate himself upon being so lucky, as no further symptoms than the small local sore had made their appearance, when suddenly his mouth became sore, teeth loose, gums soft and bled freely at times, large amount of viscid saliva, severe abdominal pain, and diarrhœa. Now he became thoroughly frightened, especially when, after a few days, two teeth came out.

Fortunately the medicine was discontinued, and upon the advice of a dentist, a mouth-wash was used with good results. The young man had lost a few pounds in weight, and was filled with the one idea of syphilis, and began to read everything he could lay hands on upon the subject. Again seeking

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treatment from the drug clerk, he was given a colorless medicine to be taken in 15-drop doses three times a day, which he had been doing for three weeks prior to calling on me. It was afterward learned that this medicine was potassium iodide, grain xv to each dose.

Examination of the patient during the first visit showed him to be a young man of good build, muscular, somewhat emaciated, having lost thirty-five pounds since the early part of March, or starting of his worry. Skin was pale, hands cold and clammy, marked œdema and redness around the eyes, a papulopustular eruption over the entire body, including the face, more numerous on the back, tongue thickly coated, breath foul, heart's action rapid and irregular, pulse weak and soft, tenderness over the liver, in fact some tenderness over the entire abdomen. Requesting a specimen of urine, the patient voided six ounces, dark in color, and seemed to cause pain while being voided. Iodism was the diagnosis thought of despite the denial of taking any medicine. A specimen of saliva tested revealed the presence of iodine as well as the urine, which also contained blood in small quantity and gave a decided reaction for albumin; no casts found.

Next visit the patient was told the results of tests and acknowledged facts contained in history above. His object in deceiving me was nothing more than shame, because of not before seeking medical advice from a proper person. An examination of blood was made to determine degree of anæmia. Result: Hæmoglobin, 40 per cent.; erythrocytes, 2,500,000; leucocytes, 8000.

Treatment of the case was as follows: for the first week potassium bicarbonate, gr. x, in glass of water four times a day. This rapidly eliminated the iodine from the system, and all the symptoms greatly improved; later a prescription was given of:—

℞ Arseni trioxidi ..... gr. j.
Ferri pyrophosphatis,
Quininæ sulphatis, of each, ... gr. xxx.
Misce. Fiat. cap. No. xxx.
Sig.: One 4 times a day.

Being unable to convince my patient that he was suffering from the use of drugs, rather than from syphilis, which he had no signs of, I determined to show him by actual experiment, so directed him to take twenty grains of potassium iodide three times a day. In four days he returned satisfied that the remedy was the cause of his trouble, as most of the symptoms, including the œdema of the eyelids and the acne form eruption. Potassium bicarbonate rapidly eliminated the iodine, and arsenic and iron overcame the anæmia. When seen two weeks ago the case was in perfect condition, having regained in two months twenty-five of the thirty-five pounds lost.

3303 North Seventeenth Street.
August 15, 1908.

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STONE IN THE BLADDER.[1]

By S. LEON GANS, M.D.

Late Assistant Genito-Urinary Surgeon to the Medico-Chirurgical Hospital and Instructor to the College; Urological Surgeon to the Kensington Infirmary for Tuberculosis.

For clinical purposes we may divide stones in bladder into large and small stones and soft and hard. This classification is of some practical value for under one of these classifications we will find our reason for selecting a particular method or route of operation. The stones made up of urates and uric acid are the softest; those of oxylate of lime the hardest, often having the surface studded with nodules giving the mulberry calculi. The phosphatic stone is the happy medium as to hardness. It is the stone formed from local conditions in the bladder—the result of decomposing urine; while the two former classes depend upon a constitutional condition to supply the salts from which the stone is formed. Excess of salts may exist for years without the formation of a stone but an intercurrent cystitis may furnish the pus to act as a framework upon which the salts will deposit to form a calculus. Of course a stone having been delivered from the ureter may increase in size while in the bladder by the agglutination of an additional amount of salts.

It is, therefore, essential to the formation of vesical calculi that we have a foreign body to act as a framework or nucleus. This may consist of pus, mucous, piece of catheter or other substance. The theory of the ingestion of water containing lime salts is fast being abandoned, as it has been shown that those cases found in lime-stone districts are by no means equally distributed, and furthermore a number of cases are encountered in districts adjacent where no limestone is to be found. Stone is frequently found in several members of the same family living in districts entirely free from lime. I removed stones from three members of the same family none of whom lived in a limestone district. In two cases the calculi were uratic and in the third case the stone was phosphatic. It is the rule rather than the exception to find a stone made of two or more elements usually arranged in concentric layers. A single stone may undergo spontaneous fracture. The theory being that the urine has undergone a change in specific gravity or reaction for a continuous period and that the change in the condition of the urine has caused the soft nucleus to swell and break up the surrounding hard layers. This explains the results gained by the ingestion of large amounts of the many advertised waters. I take it that the amount of water ingested and not the name of the water has the effect. The mere breaking up of a stone will not give the patient a chance for a cure by medical treat-

[1] Read before the North Branch of the Philadelphia County Medical Symposium on Genito-Urinary Surgery, 1903.

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ment, for in order to pass fragments per urethra the original stone must have been very small and spontaneous fracture is excessively rare. Habit and diet is a predisposing factor in the formation of stone, as faulty digestion and assimilation will aid in throwing down the kinkers of partially burned food products. This is exemplified by children who, with an imperfectly developed digestive system, eat freely of large amounts of nitrogenous products. The same applies to adults who consume an overabundance of alcohol and nitrogenous foods, leading lives which but poorly assist in their perfect assimilation. The results are not an excess of soluble urates thrown out, but of insoluble oxylates and uric acid, the predisposing elements of stone in the kidney or the bladder. Local conditions such as enlarged prostate, stricture, or paralysis will act as a predisposing factor to the formation of a phosphatic stone. By causing an obstruction to the normal emptying of the bladder, residual urine will remain. From this residual urine triple phosphate crystals will be thrown down; infection will be introduced into the bladder, the walls of which have already a lowered vitality. The result will be a cystitis, the pus from which gives the framework for the phosphates to rest upon, thus forming a phosphatic stone.

Symptoms of stone may be those of any lesion in the genito-urinary tract, therefore in any genito-urinary condition the only safe and proper manner to make an accurate diagnosis is to begin at the kidney and cover the entire area to the prepuce in the male and the clitoris in the female. The urine should be examined both chemically and microscopically as it is not unusual to find an oxalyuria giving a train of symptoms highly suggestive of vesical calculus. Any lesion, however slight, at or about the genito-urinary crossroad or posterior urethra may cause a train of complex symptoms requiring the most careful diagnostic technique. This method will not only insure a diagnosis of the condition causing the more prominent symptom, but will, in many cases, call our attention to a co-existing lesion the persistence of which would annoy the patient and embarrass the surgeon after the removal of the one factor of trouble.

When a patient presents himself with any genito-urinary condition we should carefully avoid jumping at conclusions by searching the area in immediate proximity to the symptoms described. The genito-urinary tract is such a sympathetic part of our anatomy that a tight foreskin or a pinhole meatus can easily give many of the cardinal symptoms of stone in the kidney or bladder.

Kidney calculus may simulate stone in the bladder. The chief *symptoms* of vesical calculus are *frequent urination*, with or without urgency; *blood* in the urine, which is rarely excessive but usually terminal or mixed, imparting a smoky hue to the urine; *pain* which may be referred to the bladder or perineal region, to a spot about an inch back of the meatus, sacral, lumbar or umbilical region. This one symptom is, at times, most misleading. I have seen one case in which the pain was intermittently most intense in the right heel and in two cases it was referred to the appendiceal region while in another all the sensations of the patient were suspicious of gall

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stone. Symptoms of kidney stone similating bladder stone and *vice versa* are frequent. Pain down the thighs and to the knee is not uncommon. The pain referred to near the head of the penis is less common in the aged, as an enlarged prostate will prevent it coming in contact with the prostatic urethra. The time of the pain is usually most marked at the end of urination when the walls of the inflamed bladder come in contact or when the stone is thrown on the hyper-sensitive trigone. The time and character of the pain are influenced by the composition and location of the stone, also its mobility. The more movable a stone the more painful it is liable to be when the patient is moving about, particularly when walking or being jolted; which makes this symptom more pronounced during the day. A hard oxalic calculus with spicules, if movable, will cause the greatest pain, all things being equal.

Sudden cessation of the stream during urination, is considered by some writers to be almost pathognomonic of a movable vesical calculus. I have seen cases in which the middle lobe of the prostate gland was enlarged and pedunculated, which gave this symptom most classically even to the disappearance of the symptom when the patient was in the recumbent posture; in fact any pedunculated tumor or foreign body which will act as a ball valve will give this symptom. The symptom will only be present in those cases where the stone can, at times, block the internal urethral orifice.

The *frequency and urgency* due to stone is relative but one of the most constant symptoms of stone in the bladder. The more movable and harder the stone and the nearer it is to the prostatic urethra the more pronounced this symptom. The cystitis which usually accompanies it will further add to these two symptoms, but a stone may exist in the bladder for a long time with no macroscopical sign of a cystitis. An encysted stone may exist with comparatively few well marked symptoms.

The stone will not, of itself, cause a cystitis but will act as a predisposing cause by lowering the vitality of the bladder, congesting the walls and giving a ready place for infection to be introduced from the kidneys, lymphatics, urethra or circulation.

Blood in the urine may come from many causes and hæmaturia due to stone in the bladder may be either mixed or terminal. It is usually present if sought for by the microscope but many cases will exist for months without showing blood to the naked eye. This applies particularly to soft, smooth and encysted stones.

From the foregoing symptoms it will be seen clearly that it is not safe to take any symptom separately or the symptoms collectively and arrive at conclusions without a more thorough search of the genito-urinary tract.

A tumor of the bladder, enlarged prostate, stricture of the urethra, tight foreskin, pinhole meatus, stone in the kidney or ureter, displaced uterus with cystitis, pus tubes, etc.; in fact many pelvic conditions complicated with cystitis may similate stone. Bright's disease can readily give many symptoms of stone.

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The three most reliable adjuncts in making a diagnosis of vesical calculus are the stone searcher, x-rays and cystoscope.

In using the stone searcher the patient should receive a course of internal urinary antiseptics, the external genitalia thoroughly cleansed and the surgeon's hands and instruments prepared as for a major operation. The bladder is then washed out with a warm saline or boric acid solution and enough allowed to remain in to give a perfect dilatation of the bladder without any undue tension which is always dangerous where the walls are diseased. The searcher is introduced as an ordinary bougie, allowance being made for the difference in the curve. After the beak has entered the bladder the instrument is rotated on its long axis thus throwing the ball at the end of the beak toward the trigone; this should be carefully explored by gradually rotating the searcher and then by bringing it out until it meets with resistance at the anterior part of the trigone. One finger introduced into the rectum will give material aid particularly in the aged where a post prostatic pouch is liable to exist. After the trigone has been thoroughly explored rotate the sound so that the beak points up, then with careful pressure over the bladder palpate the sides and anterior wall, not forgetting that a stone may hang from the anterior walls. Failure to detect a stone in this way may be due to careless exploration, failure to obliterate the bladder folds by proper injection of the fluid, or the stone may be encysted. A false impression may be transmitted to the examiner's hand by bringing the searcher in contact with an incrustation on the walls of the bladder striking against the pubic bone or a hard fecal mass. These errors, however, are usually avoided if care is exercised. The cystoscope is a very valuable instrument in experienced hands. It will not only demonstrate the existence of a stone, be it encysted or free, but it will give an accurate idea as to the size, shape and often the salts of which it is composed. It will demonstrate the condition of the interior of the bladder, calling attention to any weak spots as a result of sacculation, thus helping to avoid a possible serious accident by overdistention with fluid. By determining the size and shape of the stone we are guided as to the selection of the route of operation for its removal. The selection of the particular make of the male cystoscope is of importance to the extent of being a lens instrument allowing a good view of the entire inner surface of the bladder; the one that gives the best results in the individual operator's hands is the instrument of choice. All antiseptic precautions should be observed and the cystoscopic examination should be made, if possible, a few hours before an operation can be arranged for, particularly in a case of a badly infected bladder and in the aged.

For female cystoscopic examination I have used, since 1900, an instrument which is a modification of the short, straight endoscope and has been described in "Ashton's Gynæcology" as the Ashton-Gans cystoscope. By placing the patient on her back with pillows under her hips the bladder will become ballooned out as the obturator is slowly withdrawn. The staff holding the electric light is then introduced when a clear view of the inside of the

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bladder may be obtained. Before introducing the light carrier, the urine in the bladder is withdrawn with the evacuator.

The anatomical arrangement of the female bladder is such that a direct light may be used to examine the entire inner surface.

This instrument is an open one and may be used for the diagnosis of any bladder condition, ureteral catheterization, or observation also for treatment such as touching bladder ulcerations, removing foreign bodies or small stones. The female urethra being more dilatable than the male, will permit the removal of a larger stone *via* this route.

This instrument can usually be used without cocaine, while some cases demand local anæsthesia. I have rarely seen a case where general anæsthesia was demanded for its use. The male cystoscopic procedure will, in some cases, demand general anæsthesia as the highly inflamed or pus covered neck and trigone will refuse to respond to local anæsthesia.

The administration of an anæsthetic to this class of cases is very often undesirable and we may then resort to the use of the x-rays. The cystoscope will be found unsatisfactory in the contracted bladder. The skiograph will show the presence or absence of a stone and its size, whether it is free or encysted. This picture shows a phosphatic stone encysted in the bladder. The case was lectured upon at one institution as a tubercular prostatitis and at another as neurasthenia and cystitis. A careful measurement of the canal showed an elongation of the urethra of seven-eighths of an inch; this combined with the urine and symptoms led me to a diagnosis of stone or tumor, as the patient, a male, was too young for an enlarged prostate. The searcher persistently refused, in the hands of all the examiners through whom he passed, to detect a stone. This skiagraph taken by Dr. Kassabian shows an encysted stone filling up a large portion of the bladder.

After a positive diagnosis of stone in the bladder is made, the subject of treatment is to be considered. We are now ready to remove the existing stone and prevent the formation of future ones. The medical treatment for bladder stone, will apply to those of such small dimensions that the ingestion of large quantities of water will help flush it through the urethra. The subject of dissolving of a stone by this method will no doubt be dealt with in mythology. The chances of a stone undergoing spontaneous fracture with the fragments being passed per urethra is problematical. The only real method to remove a real stone is by some surgical procedure. We have five practical methods in the male: litholapaxy in which the stone is crushed and removed at one sitting through an evacuator; removal through an evacuator without crushing being required; supra-pubic removal or perineal, which may be a median or lateral. Each method has its own advocates and no doubt, that all conditions being equal, the safest method for each man to follow is the one that he is most proficient in. After a careful test of each method I believe it is proper to adopt the route suitable to the case.

The operation of litholapaxy is an admirable one when no contraindications exist, such as an encysted stone, or one which is movable but very large or very hard, small calibered urethra, enlarged prostate, tight stricture of the

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urethra, sacculated bladder or with the existence of an old fetid cystitis; contracted bladder, or diseased kidneys. A very small movable stone may be nicely removed through an evacuator without any previous manipulation if no obstruction to the passage of the instrument exists. If the cutting operation is selected the route should be taken according to indications as to size and hardness of the stone. The presence of a tight stricture at the bubo-membranous junction in a patient with a small soft stone in the bladder is the prime indication for a lithotomy which should be median perineal. By this method we cut the stricture and remove the stone at the same sitting. If upon entering the bladder we find the stone too large to extract through the incision, one of the several forms of crushers should be introduced through the perineal wound and the stone broken into fragments but under no condition should a stone be dragged through the wound lacerating tissue and wounding the ejaculatory ducts. An enlarged prostate should stand against our selection of this route, as it elongates the perineal distance. The operation is performed as in an ordinary section. Introduce a curved grooved staff which is held by an assistant; plunge the knife in the median line one and a half inches in front of the rectum and make an incision through the skin, superficial fascia, sphincter ani, perineal centre, lower edge of the triangular ligament, compressor urethra, when we will enter the membranous urethra and then through the apex of the prostate. Having introduced a gorget into the bladder we withdraw the staff and extract the stone with a spoon or forceps introduced along the gorget. If the stone was too large and needed breaking great care should be taken to wash the bladder free from all pieces before completing the operation. A digital examination of the bladder should always be made before tying in the perineal drain. When a stricture in the bulbo-membranous junction exists the primary incision should be made through the bulb when colles fascia and accelerator urinæ muscle will be cut before reaching the tissues just enumerated. All fibrous stricture tissue should be cut with a Blizzard knife before going into the bladder.

When there exists a large stone or one of great hardness, in the presence of conditions contraindicating the operation of litholapaxy or perineal cutting we must resort to the supra-pubic route. In fact the tendency among many men of the present day is to select this route as the operation of choice. The mortality is as low as by any method and it affords many advantages not possessed by the other methods. It permits of speed, which is always a favorable factor to recovery in these cases, and of a wider range of motion during operation, such as direct inspection of the bladder, removal of any incrustation, or co-existing tumor. The method is to bring the patient to the table wrapped in blankets and hot water bags to anticipate shock. A colpeurynter should be introduced into the rectum by an assistant and filled with 12 ounces of water. This acts as a support which the bladder is lifted upon when this viscus is filled with from 8 to 12 ounces of normal sterile saline solution. Great care should be exercised not to overdistend the bladder and we should be guided by the amount of tension as

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the fluid is injected slowly; the proper amount of tension is regulated largely by the condition of the interior of this viscus, as manifested by a slowly forming tumor over the pubis. The cystoscope will have shown the interior condition of the bladder, and warn us as to any pockets existing as a result of a thinning or separation of muscle-fibres bringing us dangerously near the outer serous covering. Carelessness in filling the bladder may cause a rupture within or without the peritoneal cavity. A rubber band is then placed around the penis to keep the fluid in the bladder after the catheter through which the fluid was injected is withdrawn.

By the careful and proper introduction of the fluid, the peritoneal covering is pushed up and the space of Retzius is stretched to its maximum capacity, allowing that anterior part of the bladder not covered by peritoneum to come in contact with the abdominal walls over the pubis. Some operators do not use the rectal bag and one whom I have seen dispense with this procedure has opened four peritoneal cavities in as many supra-pubics. An incision is made in the median line from above, down just above the pubis. The incision is carried between the rectii or through them and through the transversalis fascia; the prevesical fat may be separated with the handle of the knife and any vessels presenting tied. The bladder is recognized by its muscular fibres showing through the serous coat. A curved needle with a long silk thread is introduced into the bladder and as a bistoury is plunged through its walls, an incision is made large enough to comfortably introduce the finger. An assistant removes the colpeuryntor to avoid venous bleeding from the bladder walls. If the incision into the bladder is of insufficient size for the proper manipulations it should be enlarged with scissors but never torn with the finger. Often a small loose stone will be thrown out with the first gush of fluid as the incision relieves the intravesical tension. The band around the penis is removed by an assistant at the time of incision into the bladder. The stone not having made an escape in this manner may be lifted out with a spoon or forceps. If the stone is too large to remove through the opening without doing damage to the edges of the wound a crusher should be introduced through the opening and the calculus reduced to fragments. After the stone is removed a careful digital exploration is made to remove any incrustation or fragments, also to note the condition of the prostate gland and interior of the bladder. After the bladder has been freed from any pieces of stone, gravel, or incrustations and the interior has been thoroughly flushed out with saline solution, a large drainage tube is introduced into the bladder at the lower angle and kept in place by a stitch. This tube should have several eyelets which should be below the surface of the anterior bladder walls; failure of this precaution will cause the dressing to be constantly soaked with urine as the Cathcart drain will not act. The bladder may be closed with interrupted sutures, not going through the mucous membrane; this will depend upon the length of the incision and the character of the case; at all events it is wise to anchor the bladder to the tissue above. The space of Retzius should have a small gauze drain. The external incision is closed about the tube with interrupted sutures. To

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the drain is attached a Cathcart drainage apparatus and if the reservoir is kept filled with a sterile solution and the stop-cock properly adjusted there will be a constant negative pressure in the bladder drain. By this method the dressings and bed will be kept entirely free from urine and by opening the control stop-cock we will cause a positive pressure in the bladder, and in this manner flush it out at will. After the urine has become clear and granulations active the tube may be removed, the patient remaining on his back. The bladder should then be washed out through the urethra, not over two ounces of fluid being injected at one time, until perfect healing has taken place.

During this interval a urethral catheter is tied in place. The patient should be kept on liquid diet, with the administration of internal antiseptics immediately after any method of operation.

Before proceeding to any operation on the genito-urinary tract the patient should receive careful attention as to the condition of the skin and gastro-intestinal tract. A thorough examination of the urine should be made. Most of these cases bear ether badly, and a successful surgical procedure may be followed by uremia, even though no casts be present. Chloroform is advisable in some instances, while spinal anæsthesia holds forth some promising inducements in this line of work. I have resorted to this in three cases where the urine showed evidence of kidney involvement and in each case the patient made an uneventful recovery.

1618 North Fifteenth Street.

CHLOROFORM POISONING.[1]

By JOHN V. SHOEMAKER, M.D., LL.D.

PHILADELPHIA.

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Gentlemen: It affords me pleasure to present to you for study this morning a case of chloroform poisoning which occurred two days ago. From this case you should learn a lesson that would make you careful in the admintration of the drug whether by mouth or by inhalation.

This poor girl took the drug with suicidal intent. She and her sweetheart had some differences, and to disgrace and spite him she took the drug. The day before the attempt on her life she bought, at a first-class drug store, two ounces of chloroform on pretense for cleansing purposes. It has been learned since that she made several attempts on her life, but never succeeded. The quantity taken by her was almost two ounces. Immediately after she had swallowed the chloroform she fell on the floor unconscious and the sound of

[1] Delivered in the Medico-Chirurgical Hospital.

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the fall brought the chambermaid to her room, who informed other members of the household. Our ambulance at once responded to the call. The physicians in charge found her in a collapsed, unconscious condition. The pulse was so weak and feeble that it could not be counted, and respiration was hurried and panting in character.

The treatment instituted was an immediate hypodermic injection of ether, injections of whiskey and strychnine followed, and artificial respiration was kept up in the ambulance while it was on its way to the hospital.

When the hospital was reached the patient suddenly made an attempt to vomit, and brought up some food and liquid which had a strong odor of chloroform.

Artificial respiration was kept up continuously and oxygen given by inhalation. A hypodermic injection, containing gr. $\frac{1}{150}$ of atropine sulphate, and gr. $\frac{1}{75}$ of digitalin. Respiration soon became more regular and deeper, and the pulse gradually increased in volume. Of course external heat was applied, and the limbs and body raised higher than the head. This favored the flow of blood to the brain, which is essential in either chloroform or ether poisoning, to keep active the vital centers in the brain.

At the end of an hour's treatment she vomited again and expelled quite a quantity of watery mucus which had a very strong odor of chloroform. She did not gain consciousness until four hours after admission into the hospital, and after she had gained consciousness she vomited continuously for twenty hours. The vomitus consisted chiefly of watery mucus. The white of one egg in water was given every two hours as a demulcent, but she never retained any until her bowels were thoroughly emptied from two grains of calomel given in doses of gr. $\frac{1}{10}$ every fifteen minutes. After the free action of the bowels she was able to retain broths, milk, and lemon albumin.

Medicinally she has received, hypodermatically, strychnine sulphate, gr. $\frac{1}{40}$, and digitalin, gr. $\frac{1}{100}$, every four hours.

The patient improved markedly and I believe will not suffer any bad after-effects. It is possible that not much of the chloroform was absorbed. The urine shows no casts or albumin, hence the chloroform has not made any marked impression upon the kidneys, by which it is largely eliminated.

When chloroform enters the circulation, whether by absorption from broncho-pulmonary mucous membrane during inhalation, or by that of the stomach, the effects are the same. After a brief period of stimulation the depressing effect of the drug is manifested, and in overdoses it is a cardiac poison, acting by destroying the contractility of the heart muscle. Dilatation of the heart results, which may precede the loss of conjunctival reflexes and even occur before any fall of blood-pressure is perceptible. Artificial respiration, therefore, often fails to revive the patient because the enfeebled and distended heart is unable to maintain the circulation. The dilatation is not produced through the pneumogastrics, but is the direct effect of the drug upon the cardiac mechanism.

Upon the nervous system the effects are very positive. Chloroform first affects the brain, then the sensory part of the spinal cord, then the motor

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tract; next the sensory part of the medulla oblongata, and finally the motor portion of the medulla, thereby producing death from failure of respiration unless the heart has already succumbed to the drug. Death from syncope not infrequently happens from chloroform before complete anæsthesia has been produced.

AMERICAN PROCTOLOGIC SOCIETY ABSTRACTS.

REPORTED BY LEWIS H. ADLER, M.D.,
PHILADELPHIA.

(Continued from the August issue.)

"THE CHOICE OF AN ANÆSTHETIC IN RECTAL SURGERY," by Dr. Jerome M. Lynch, of New York City, who stated that before the days of the specialist in anæsthesia, no matter how expert the surgeon, his success was more or less at the mercy of the recent college graduate—or undergraduate—who secured a hospital appointment and came into the operating room as the anæsthetist, without any preliminary study of the art and without any knowledge of the influence of the different anæsthetics upon the human system. Now the day of the specialist has come, and with it the trained anæsthetist, making incalculably happier the surgeon's task.

Nevertheless, the surgeon having studied his patient's system, and understanding his condition as the anæsthetist cannot, should use his own judgment in the choice of the anæsthetic to be given.

It is important that some method of shortening the anæsthesia be employed; that the intake of chloroform or ether be lessened by giving the patient some less objectionable or less toxic drug, or by some preceding anæsthetic less hazardous.

Morphine and hyoscine, either as a substitute or preliminary to general anæsthesia, have been used successfully in some 75 cases. At the New York Polyclinic, St. Bartholomew's, and in private practice, considerable experience has been had with ethyl chloride, and it has been used now in over 600 cases, as a general anæsthesia for short operations and examinations, or as a preliminary anæsthetic to chloroform or ether, without a single accident or bad result.

The author was the first to advocate the drop method in the use of ethyl chloride. He found that by this method the drug could be used more intelligently, and that much less of the anæsthetic was required. Another advantage in this procedure is that it does not crystallize all over the mask as it does in the spray method.

The author did not advocate this anæsthetic to the exclusion of ether or chloroform, but held that for examinations, short operations, as a preliminary to ether or chloroform, and as an adjuvant to hyoscine and morphine, it is safer and more efficacious than any anæsthetic we use to-day. He was decidedly opposed to any form of closed inhaler. To the open method must be attributed the good results with ethyl chloride. He did not find ethyl chloride, however,

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suitable for any anæsthesia which lasts over ten minutes, as vomiting is apt to follow a prolonged use of this drug. It is also contraindicated in alcoholics, children with adenoids, patients suffering from acutely inflamed conditions of the throat, or advanced cardiac disease. Spasm of the larynx has occurred in some 5 per cent. of the cases; but this is at once relieved by withdrawing the anæsthetic, or by substituting a few drops of chloroform.

Another anæsthetic that has been overlooked, and one that is particularly safe, is nitrous oxide, alone or with oxygen.

In the author's opinion the surgeon would get better results and the anæsthetist gain confidence, if the anæsthetic were not rushed in the beginning. The anæsthetist should take plenty of time; let the patient get used to the smell of the anæsthetic and accommodate himself to his surroundings. The patient, then, is not frightened, it takes less of the anæsthetic, and he comes out of it in better condition. Under no circumstances should a patient be too forcibly restrained in the early stages of anæsthesia.

In conclusion, the author stated be sure of your anæsthetist. No man should give an anæsthetic alone till he has been proved competent.

Above all, an anæsthetist is required who is competent in an emergency. The man who knows what to do when things go wrong, and does it, is the man who is worth his fee. There is no time for cogitation when a man's heart stops beating. But there is hope for the patient and success for the surgeon *if the man behind the dope is on the job.*

"Surgery of Specific Diseases of the Rectum," by Dr. Geo. B. Evans, Dayton, Ohio, who said that venereal diseases of the rectum constitute maladies which have neither been mastered by the syphilographer nor the proctologist. The former is not familiar with the armamentarium for rectal exploration, and the latter is not thoroughly familiar with venereal diseases. The manifestations of syphilis escape the former because they are often removed from the field of vision, while the attention of the latter is called to the fact because pain exists in the rectum. In the first place, two propositions confront us: First, is this form of stricture of the rectum a local manifestation; that is, is it due to a primary sore? Second, is it the result of secondary or tertiary syphilis? According to an able author it is due to the rectum becoming inoculated through the secretions from the sores upon the vulva, thus giving rise to chancroidal ulcers, these ulcers becoming cicatrized and constriction taking place. Again, the presence of chancroids at the orifice of the vagina or about the anus gives rise to an inflammation of the areolar tissue surrounding the lower portion of the gut, and by the effusion of inflammatory material at certain points, gives rise to constriction either in this way alone, or by directly producing inflammation and ulceration of the mucous coat of the bowel. Personally, the author had seen many cases of chancroid of the vulva of the worst kind—extending down and involving the anus; being filthy in the extreme, but stricture of the rectum did not exist. If chancroidal virus was carried into the rectum, we surely would find that nearly every prostitute would have a stricture of the rectum. Secondary induration of the rectum, following a chancroid of the anus, the author believed could occur; this in-

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duration being followed by chronic inflammation and ulceration, and finally, developing cicatricial tissue, forming an extensive stricture. Again, this stricture may be the result of true tertiary inflammation or ulceration, the rectal wall being infiltrated with a syphilitic neoplasm, or by becoming organized into contractile tissue, produce the stricture. The true explanation of the preponderance of stricture in women, whether specific or otherwise, is to be sought for rather in the anatomical relations of the rectum, than in any constitutional diathesis. The site of the stricture is generally at or about the attachment of the fibres of the levator ani muscles; this possibly plays an important causative factor indirectly, there being more or less constriction, consequently if there is any ulceration here the power of resistance in the patient is not sufficient to overcome the trauma. Here it is where the fæces meet their first resistance; here it is where these strictures undergo contraction and chronic inflammation follow. If one believes that all strictures, not cancerous, are syphilitic, they may use anti-syphilitic remedies, but they will generally find that they fail to produce the desired results.

Finally, the following conclusions were formulated: That rectal stricture may follow chancroidal infection by virtue of its pathology, which may be the result of absorption or lodgment of infectious matter on mucous membrane or in submucous or even perirectal tissue, and that rectal strictures may be but a latent manifestation of syphilitic infection. That this belief is in accord with the author's experience and is the reasonable deduction from the experience of other competent observers. Moreover, that while iodides are usually prescribed in these conditions, they are not of curative value, and that it is only by incision and internal mechanical dilatation that these strictures of specific nature can be made tolerable.

Exhibition of a New Examining Speculum, by Dr. Dwight H. Murray, Syracuse, N. Y., who states that it has been said "of the making of many books there is no end," and so it seems to be with instruments.

Among the good qualities of an examining speculum there should be:—

1. It can be introduced with little discomfort to the patient.
2. It must allow a good view of the part to be examined.
3. It can be withdrawn without added discomfort.
4. It can be easily cleaned and sterilized.

He has found that this speculum possesses these qualities in a goodly degree, and he takes pleasure in presenting it to the society, hoping that some may find benefit in its use.

"Spontaneous Intestinal Anastomosis," by Dr. James P. Tuttle, New York City, whose paper consisted in a discussion of the means by which nature overcomes intestinal obstructions through spontaneous anastomosis. Four cases were reported in which the obstruction suddenly gave away, and the patients lived for various periods, with more or less regular movements of the bowels. These movements were afterward shown in one case by autopsy, and in two cases by operative interference, to have taken place by spontaneous lateral anastomosis between different portions of the bowel. The fourth case

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was never operated upon, but being at the point of death, with great abdominal distention and inflammation, was relieved by some sort of giving away of the obstruction, and eventually recovered. This patient had suffered from colitis and fecal stasis high up for a long time; since this experience, however, these symptoms have disappeared and she has remained entirely well.

"MESOSIGMOIDOPEXY, WITH THE REPORT OF TWO CASES," was the title of a paper by Dr. Louis J. Hirschman, Detroit, Mich.

After defining the different forms of prolapse of the rectum, the author called attention to the unsatisfactory results so far attained in the various suspension operations for prolapse of the third degree. He argued that as in operations on the retroverted uterus, the shortening of the natural supports of the womb has superseded the illogical attachment to the anterior abdominal wall. He hoped that the mesentery, the natural support of the bowel, will be used to replace the old fixation methods used heretofore.

He reported two cases suffering from prolapse of the rectum and sigmoid of the third degree, both of whom had had other operative measures performed without satisfactory results. These two cases were operated on with entire relief by the author's method of mesosigmoidopexy, the technique of which is as follows:—

Under hyoscine and morphine anæsthesia, fortified with a small quantity of chloroform, the abdomen was opened a little to the left of the median line, the incision paralleling Poupart's ligament. Nearly one-half of the sigmoid flexure was found telescoped into the rectum, and the space formally occupied by the uterus filled with the rest of the prolapsed sigmoid. The stump of the right broad ligament was found firmly attached to the sigmoid, thus holding the lower part of it in the prolapsed condition. The mesentery of the sigmoid was very much elongated, allowing the bowel to remain in the lower pelvis. The adhesion to the stumps of the ligament was separated, and the stump of the broad ligament covered over the peritoneum, the prolapsed bowel lifted out of the pelvis, and the outer surfaces of the mesentery of the large loop of the sigmoid lightly scarified. Beginning toward its deep attachment (about six inches from the bowel in this case) the two opposing surfaces of the meso-sigmoid were brought together by interrupted twenty-day catgut sutures (No. 2). Three rows about an inch apart were placed in this manner, the upper row being three inches from the bowel. As the sutures were tied the sigmoid and the rectum were lifted from their prolapsed position.

For fear that the curve of the loop might be lessened and possible kinking take place (a rather remote possibility on account of the strength of the adhesions), the longitudinal muscular band of the sigmoid, together with an eighth of an inch of the serous and muscular coats of the bowel on either side of the band, was rolled in upon itself by transverse interrupted catgut sutures, placed three-quarter inches apart around the curve, and for two inches beyond at each side. This rolling in of the muscular band made a rib of firm muscular tissue which materially increased the size of the curve, and greatly strengthened it.

The scarification of the sutured surfaces of the meso-sigmoid assured us of an adhesive surface of over eighteen square inches, and yet allowed perfect

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motility of the organ. The abdomen was closed, the rectocele reduced and repaired, and the prolapsed anal mucous membrane resected.

In the after-care of these cases the patient is kept confined in bed on a restricted assimilable fluid diet, and the bowels not allowed to move for about ten days. At the end of that time the diet is gradually increased, but the patient not allowed to get out of bed and walk until the end of the fourth week.

In the two cases reported by the author in his paper, reports from the patients six and eighteen months afterward respectively, evidenced the fact that they were in perfect health and both having natural normal bowel movements without assistance.

While these patients were women, the same condition occurs in men, and the same technique is applicable to them.

"Carcinoma of the Rectum; Comparative Results of Operative Procedures," by Dr. J. R. Pennington, Chicago, Ill., who stated that the purpose of this brief paper was not so much to call attention to any particular scientific manner of treating a case of carcinoma of the rectum as it was to report, compare, and contrast the result of the two cases which, in the beginning, were very similar. One patient, however, followed the advice of a Christian Science healer, and the other that of her physician.

To epitomize: The first patient was a male, 48 years of age, and apparently healthy, robust, and vigorous.

The second one was a female, 69 years of age, weak, emaciated, and hardly able to withstand a surgical operation.

The man dictated what should and should not be done for his condition.

The woman said, "Doctor, I am in your hands and trust everything to you. Do the very best you can for me and I will be satisfied."

He pinned his faith to Christian Science.

She pinned hers to her doctor.

He spent the last year of his life in a most miserable and wretched condition—a condition appalling and pitiful to behold.

She has suffered no inconveniences from the operation, and has spent the past year of her life enjoying the very best of health, happiness, and pleasure.

"Primary Melanotic Sarcoma of the Rectum and Anus with Report of Two Cases." Louis J. Krouse read a paper on the above subject, and stated that very little space or none at all has been devoted to this subject in works on general surgery. He quotes what the various authors on diseases of the rectum say in reference to this class of new formations. He has gathered together all the cases of this disease which have been reported in the literature up-to-date, and has compared the relative infrequency of this class of neoplasm with other malignant growths located in the same region. Of the nineteen members of the American Proctologic Association with whom he corresponded, only four reported six cases, which, added to the two of the author's cases, make eight cases showing the infrequency of this class of new

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formation. Fifty-two cases were collected from the medical literature, making altogether sixty cases.

In forty-five cases, in which the age and sex of the patients were specified, there were twenty-eight males and only seventeen females. No decade was exempt except the first, the youngest being a boy aged 17, and the oldest a man aged 75. That it was more prevalent in the sixth decade, being a disease of the middle period of life and old age. The average being 49 years and 5 months.

Of the fifty-one cases in which the location of the growth was noted, thirty-seven were situated in the anus, thirteen in the rectum, and one in the sigmoid. The anal representing 72.5 per cent., the rectal 25.5 per cent.

Concerning the etiology of these melanotic growths, some authors claim that in the great majority of cases, one can find a distinct positive cause. It is the opinion of these authorities that the growths originate from birthmarks of pigmented moles and warts. Wagner found it to be the case thirty-seven times in the one hundred and forty-five cases of Dieterich, or 26.2 per cent. In his own cases the percentage was higher, being found nine times in the nineteen cases, or 47.3 per cent. Eve found it to occur twenty-six times in the thirty-three cases of melanotic sarcoma, or 78.8 per cent. As pigmented moles or warts are not likely to be found in the rectum, the author suggests that perhaps the papillæ, which are situated at the border line where the skin and mucous membrane unite, may act as the starting point from which these growths originate.

From the author's compiled table he finds that thirty-one cases were operated upon and ten were not. Of the thirty-one cases only twenty-eight cases can be utilized. Of these eleven had had no recurrences and seventeen had recurrences. Of these, five lived beyond the three years' limit without recurrences. Tuttle, Key, and Drenkhohn each had one case, and Esmarck had two. Tuttle's died in three years and four months of metastasis; Key's died at the end of the third year of recurrence; Drenkhohn's died of illeus at the end of the third year. Only Esmarck's cases had no recurrences: one was alive at the end of the eleventh year, and the other at the end of the third year.

Attention is drawn to the rapid recurrence after operation. Three had recurrence as early as the fourteenth day. Two between the second and fifth month. Four between the fifth and twelfth month, and two between the first and third year.

The average length of time that the patient lived after an operation and dying from recurrence was nine months. The shortest was five weeks, and the longest was three years.

The duration of the disease was noted in twenty-four cases from the time of the first appearance of the trouble to the day of operation. The longest was four years, and the shortest two months; the average fourteen months and twenty-two days.

The length of time that the patient lived without operative interference can be arrived at from the report of four cases. One lived two years and

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eight days; another one year and five weeks; another one year, and the fourth lived five months, an average of about thirteen months.

Cases operated upon and dying from recurrences, the length of time varied, one died in sixteen days; four died in one to two months; four died in two to five months; three died in one to two years; three died in three to three and one-half years.

The length of time from the first appearance of the trouble till death, where no operation was performed, only three cases can be utilized: One lived one year and five weeks; one lived two years and eight days, and the third lived five months.

A microscopical examination of the tumors revealed that most of them were of the alveolar type.

He concludes his paper with the suggestion that as the course of the disease is so malignant, extirpation is the only rational thing to be done. Not only should the neoplasm be removed thoroughly, but a good deal of healthy tissue should be sacrificed. Should the tumor be located at or near the anus, the sphincters as well as the inguinal gland should be extirpated.

Editorial

DIGITALIS.

THIS valuable drug has been so much abused and condemned only by men who have become nihilist owing to the fact that they have not yet learned the first principles of medication. Too many expect immediate results by giving large doses. Others so combine with it a conglomeration of other vascular stimulants that digitalis cannot make known its effects upon the organism. Still others prescribe it at random and often give it in cases where it is absolutely contraindicated. Digitalis is a powerful drug and valuable only in selected cases.

Locally it is rapidly absorbed by the skin and is said to have some sedative effect when used on spongiopilin or cataplasm. Internally, it has a bitter taste, but has no tonic action upon the stomach. Especially in large doses it disorders digestion, causes nausea, vomiting, and even diarrhœa when too long continued. It reduces the heart's action by lengthening the period of rest, or systole, thus allowing its cavities to receive more blood. At the same time that it increases the inhibition, it stimulates the motor ganglia and increases the force of the heart-muscle. Digitalis also assists in raising the arterial tension by causing contraction of the arterioles throughout the body. As a routine practice it is prescribed as a heart tonic in all cases of failure of circulation due to the feebleness of the heart's action. It should not be prescribed in valvular disease as long as compensating hypertrophy is keeping up the work of the heart; but when this fails and dilatation is commencing digitalis will not only slow and steady the heart, but improve the nutrition of the heart-

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walls by increasing the pressure in the coronary arteries and allowing them a longer time in which to be filled. In mitral stenosis it is used in order to give the left auricle more time to empty its contents into the ventricle. In aortic stenosis it is contraindicated, as a rule, except in cases of arhythmia or dropsy it may be employed with care for a short period.

Digitalis stimulates the pneumogastric and vasomotor nerves; also the vasomotor ganglia in the medulla. The brain and spinal cord are affected slightly.

There may, however, be headache, delirium, and vertigo, possibly from the disturbance of the cerebral circulation as a result of volatile oil, or from sick stomach produced by the drug. Large doses reduce the reflex action of the spinal cord and paralyze the peripheral nerves, both motor and sensory.

The increase of arterial tension in the glomeruli as a result of its general effect upon the circulation, plus some special action by which the renal arteries are dilated, bring about its diuretic properties, which become pronounced when the diseased condition is accompanied by œdema and low arterial tension.

As an antipyretic it is of little value. Its action is too slow and the disturbing effect digitalis has upon the stomach precludes its use in febrile conditions.

Digitalis lessens the contractility of the muscles, causing lassitude and want of vigor. In large doses it excites Setschenow's center, and produces muscular paralysis.

Another feature occasionally observed is that it depresses the venereal functions and also may cause an erythematous or papular eruption upon the skin, after the internal or external use of digitalis.

Cardiac dyspnœa or asthma, due to engorgement of the pulmonary circulation, is usually relieved by digitalis; and functional weakness, with irritable heart or low arterial tension, with migraine or delirium tremens, is very promptly benefited by it.

Digitalis is a useful remedy in hæmorrhages, as in menorrhagia or hæmoptysis, and is of particular advantage in the metrorrhagia or menorrhagia of plethoric individuals, or when dependent upon mitral disease. Postpartum hæmorrhage may likewise be restrained by the use of digitalis, which may advantageously be combined with ergot.

Among the chief contraindications of the drug are: slow pulse, due to weakness of the heart wall; fatty degeneration of the heart, pericarditis, simple hypertrophy, compensating hypertrophy, high arterial tension, incompetent aorta, atheroma of the blood-vessels, and in tricuspid insufficiency it may indirectly cause pulmonary apoplexy, owing to sudden increase of pressure.

A word in regard to the preparations. The infusion is probably the most reliable, because it can be freshly made or the powdered leaves may also be used with success. The fluidextract and tincture are likewise valuable if not too old, and made from good leaves. The worst of all the preparations is an infusion made from the fluidextract, so often practiced by unreliable pharmacists. In such an infusion all the active principles are precipitated by the

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water and rendered valueless. So many of the commercial, or isolated active principles of digitalis are made from the seed, and are inefficient and unreliable.

It is probably due to these agents that many physicians have lost faith in this drug. Preparations properly made from fresh leaves and administered frequently in small doses in indicated cases, success is sure to follow.

Materia Medica and Therapeutics

AIR (FRESH) IN PNEUMONIA.

Dr. T. W. Kilmer, of New York, reports the result of the fresh-air treatment in 16 cases of pneumonia and 20 cases of broncho-pneumonia in dispensary babies. Nearly every clinical type was represented, from mild to very severe, and the diagnosis was positive in every case. Many of the parents were ignorant, but willingly followed instructions and carried out the treatment surprisingly well. The treatment of both lobar and broncho-pneumonia in these cases consisted in giving an initial purge (castor oil or calomel); mustard poultice to the chest; sponging to reduce fever; cutting down diet to one-half strength; hygiene of body, clothing, and sick room, etc.; light expectorant every two hours for six to eight doses in twenty-four hours; keeping the gastro-intestinal tract clear; abundance of fresh air; rest. One patient died, but not until the mother had insisted on taking the baby to a hospital; it is nevertheless included in the series. This makes the mortality 2.77 per cent., which is remarkably low for either private or hospital practice. The study, Kilmer thinks, shows conclusively that, by a combination of simple instructions to parents, and quiet, rest, proper food, and, above all, fresh air for the child, the mortality of one of the most serious diseases of infancy can be greatly reduced. (Journal of the American Medical Association, July 25, 1908.)

ALYPIN AS A LOCAL ANÆSTHETIC.

Sorlat (L'Echo Méd. du Nord, March 29, 1908) has written a thesis on the advantages of alypin as a local anæsthetic. Many such drugs have been put forward since the appearance of cocaine, but only one or two have been found to be of permanent value, and alypin is one of these. Its poisonous dose is about double that of cocaine and slightly less than that of stovaine; it is easily prepared, is not altered by heat, and therefore readily sterilized, while post-operative intoxication, with the exception of slight headache, has not been experienced. It acts as a vasodilator—not a constrictor, like cocaine—and is therefore valuable for operations about the head and face, as the slight congestion of the bulb which it produces tends to prevent post-operative syncope. For dentistry it has proved itself to be particularly valuable, causing no dangerous symptoms, and in ophthalmology also, while in rhino-surgery it is preferable to cocaine, because it does not cause retraction of the mucous membrane; finally, its price is appreciably less than that of cocaine. Grazzi (La Clin. Med., April 3, 1907) speaks favorably of

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alypin as a local anæsthetic in throat and ear work. It acts quite as well as cocaine as an anæsthetic and in smaller doses. It is more soluble than cocaine, and the solutions can be readily sterilized; it is also less toxic and less costly. In chronic middle-ear catarrh the author has found it useful when injected through the Eustachian tube in moderate doses. It has also proved beneficial in some varieties of tinnitus aurium, either given through the Eustachian tube or in the external auditory canal. In painful swallowing, from whatever cause, alypin is useful, either painted or sprayed on the throat; moreover, it does not leave behind it that sense of constriction which follows the use of cocaine. Alypin has a vasodilator action, as opposed to the vasoconstrictor action of cocaine; this, again, is no disadvantage when comparing the two drugs. (British Medical, July 4, 1908.)

ANTIMENINGOCOCCIC SERUM.

Drs. S. Flexner and J. W. Jobling, of New York, report 357 cases of epidemic cerebrospinal meningitis treated with the antimeningococcic serum, taking account of all the leading features, all having been diagnosed bacteriologically as well as by the usual clinical tests. Forty-three moribund patients or fulminant cases, in which the patients survived the first serum injection less than twenty-four hours were excluded from the tabulation. Under one year of age the recoveries were 50 per cent. and the ratio rapidly increased with the age, being 92 per cent. in patients between 5 and 10 years of age. Above that it again fell to 67.9 per cent. in those over 20, which is accounted for in part by the fact that a large number of these were treated by scattered physicians who had had little experience with the serum. Wherever a series of cases has been treated by one observer, the recovery rate at this age has been high. The histories were sufficiently explicit in 328 cases to show approximately the period of the disease when the injections were begun. In 121 patients injected between the first and third days, there were 103 recoveries (88.1 per cent.); in 100 first treated between the fourth and seventh days, 78 recoveries (78 per cent.); in 107 treated only after the seventh day, 68 recovered (63.6 per cent.). The benefit of early injection is clearly shown, but the authors think the outlook for later cases is still encouraging with the treatment. In 207 cases the histories were sufficiently definite as regards the mode of termination of the disease to show that 201 terminated by lysis, and 69 by crisis. The average duration of active symptoms in the 220 cases where it could be ascertained was about eleven days. This later study has confirmed the former observations of the rapid decrease of the diplococci under the influence of the injections, the lessened turbidity of the meningeal exudate and the decreased leucocytosis in favorable cases. This series of observations also shows, like the earlier ones, that in the great majority of the cases, the recovery after the serum treatment is complete. The number of complications was small and the only persistent defect noted was deafness in a few instances only, and more often than not observed before the beginning of the injections. (Journal of the American Medical Association, July 25, 1908.)

CHLOROFORM IN OBSTETRICS.

Sir W. J. Sinclair, of Manchester, England, at a meeting of the North of England Obstetrical Society, in a paper

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claimed that "Chloroform, as administered in obstetric practice, which was the prevailing use of it at first on account of Professor Simpson's influence, brought disappointments. Its shortcomings were soon fairly demonstrated, especially by Simpson's rivals, to be very much what the experience of half a century has taught us all to accept as the truth. The administration of chloroform had certain unfavorable effects on the pains of labor; when long continued it prevented firm contraction, and it produced post-partum hæmorrhage, ending in hæmostasis by thrombosis instead of by contraction, and consequent puerperal fever in the form of metrophlebitis. Although since then it has been abundantly proved that ether is in many ways a less harmful anæsthetic than chloroform in obstetric practice, British conceit had no expression except the language of contempt for the opinion of American obstetricians who had almost universally adopted ether as the obstetric anæsthetic." (Lancet, May 30, 1908.)

DIET IN TYPHOID FEVER.

Dr. R. M. Harris illustrates the benefit of proper dieting in typhoid fever by a record of 148 cases. The battleground of treatment, he says, lies in the gastro-intestinal tract; any vital organs containing pathognomonic lesions of an infectious disease need rest, and our aim should be to nourish the patient without increasing saprophytosis. The excessive nitrogenous waste in typhoid fever, is not due, he holds to the typhoid toxin, but probably to mixed infections, and emaciation occurs independently of the amount of food taken and results more rapidly from toxæmia than from lack of nourishment. Therapeutic fasting allows an uncomplicated typhoid infection to pursue a normally mild course without any mixed infection, by reducing the bacterial content of the intestines. It is the severe and sthenic cases that are especially amenable to this treatment. In such cases fasting should be prescribed for from one to three days, though it is rarely advisable to continue it through the third day, as the severe symptoms are usually relieved by that time. In other than sthenic cases it is not often necessary. If pneumonia intervene, more liberal diet should be allowed. After fasting for from twenty-four to forty-eight hours, a very restricted diet of broths, etc., in prescribed amounts should be given. Harbin does not favor a milk diet, as no one can tell that it will not form a curd which is worse than solid food. It is liable to do so when diluted with from two to five parts of broths, hot water, etc., and may then be valuable. Gelatin he considers a valuable adjuvant in the dietary of typhoid; it adds to the relish of the various liquids, lessens the nitrogenous waste and prevents hæmorrhage. He would use it as a routine in all cases, though in very aggravated diarrhœic cases, in which it is not well tolerated, only in small amounts on alternate days. Fasting and a restricted diet greatly enhance the effect of hydrotherapy, and frequently render the use of antipyretic measures needless. In the series of cases which form the basis of the paper, the low mortality (4.7 per cent. and only 3.4 per cent. in 144 whites) is ascribed largely to the dietetic management, though many had very inefficient nursing. (Journal of the American Medical Association, July 18, 1908.)

ERGOT; VALUABLE IN MANY CASES OTHER THAN OBSTETRICAL.

Dr. Robinson has in the past seven years met with a variety of dermatolog-

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ical conditions, and says that during that period of time he has used ergot hypodermically with gratifying results in 300 cases of acne rosacea. He used the deep gluteal injections, and reports three cases selected from many of various kinds illustrative of its uses. They represent respectively acne rosacea, varicose veins in an obese aged woman, and extreme nervousness with defective venous circulation associated with excessive cigarette smoking. (Medical Record, July 11, 1908.)

GELATINE ENEMAS IN HÆMORRHAGES FROM TYPHOID FEVER.

E. Michaelis used hot gelatine enemas (Medic. Klinik, 1908, No. 2) with excellent results in hæmorrhage from typhoid ulcers. The irrigations were performed from three to four times daily, a 5-per-cent. gelatine solution being used at 48° to 50° C., in amounts varying from 250 to 500 cubic centimeters. The solution was introduced slowly and under low pressure. (La Tribune Médicale, August, 1908.)

GONOCOCCUS INJECTION IN GONOCOCCAL INFECTIONS.

Dr. E. E. Irons reports the study of 40 cases, including 31 cases of arthritis, in which treatment by the injection of dead gonococci was tried, and claims that the treatment is of great value in many cases. In cases of systemic infection, recovery is invariably spontaneous, a period of acute clinical manifestations. However, some cases do not recover, but pass into a chronic state, and require months or years to get well. In the first class of cases immunity develops rapidly, and, clinically, little benefit appears to result from the injections of dead gonococci. In the chronic cases, where the mechanism of immunity fails to rid the body of the organisms, recovery can be hastened by the injection of dead gonococci, and no harm has been seen to follow the injections. As a diagnostic procedure it has many points in common with the tuberculin method. All the cases were treated with cultures obtained from other sources than the patients in question, isolated from various lesions, including urethritis and arthritis. To obviate objections arising from the use of heterologous organisms some of the material was prepared from two and three strains of gonococcus. In the early cases treated from twenty to fifty million organisms were given at a dose. This usually produced a rise in the opsonic index, but no change in the clinical course of the disease. The dose was accordingly increased to one hundred, and later to one thousand million organisms. The intervals between the injections varied from three to seven days. The most constant feature in the reaction is the increase in joint pain and tenderness. In opsonic terminology the clinical reaction corresponds to the negative phase. (Arch. of Int. Med., May, 1908.)

HOMOGENEOUS RAYS IN THE TREATMENT OF CARCINOMA.

Drs. F. Dessauer and Max Krüger (Berl. klin. Woch., March 16, 1908) considered that as the peculiar chemical composition of the carcinomatous cell has been demonstrated, and as this cell possesses a low resistance for tryptic digestion, the possibility of influencing it by chemical or physical means must be admitted. It ought therefore to be possible to induce rapid disintegration by radium or x-rays. Practical experience, however, has shown that these rays exert a beneficial therapeutic influence only on superficial processes, and so far no

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deep action has been attained. Dessauer, who as an engineer has studied the question from the technical point of view, found that homogeneous rays which can act deeply may be obtained by placing the tubes as far as possible from the object, by using several tubes, by filtering off the soft chemically-active rays generally used, and only using the hard penetrating rays. He therefore employed a high tension, slowly alternating current, having the properties of a sinusoidal current. This he obtained by simultaneously allowing two hard Roentgen tubes to act in the same direction. Krüger reports that he has employed these rays in a series of cases, and gives the details of one case, by which he argues that the deep action may prove therapeutically useful. The patient was suffering from an extensive recurrence of carcinoma, the primary growth having been situated in the cervix. From August 14, 1907, until September 29, 1907, the patient received forty-six injections of trypsin, but no improvement in the local or general condition could be detected. As the trypsin proved a failure, he began treating with homogeneous rays. In spite of a total exposure of three hundred and sixty-four hours, the patient lost weight and strength, and died on December 17, 1907. The post-mortem examination revealed a most extensive central disintegration of the cancerous lymphatic glands. This destruction of the carcinomatous elements was much more marked than is ever seen under natural conditions, and the author states that he has never met with anything approaching it in intensity after the use of trypsin. He therefore concludes that it was produced by the deep action of the rays. Further, he found that the rays can be applied without any risk of damaging the skin, if adequate control is exercised. He proposes applying the rays after the surgeon has removed all that can be removed, and by means of the deep action he hopes to destroy all the carcinomatous foci left behind. He has worked in this direction for five months, and proposes communicating his results up to date later. These results are so far encouraging. (British Medical, August, 1908.)

IODINE INJECTIONS IN TUBERCULOSIS OF THE TESTES.

Dr. Finoccinaro (Il Policlinico, February, 1908) reports three cases of tuberculous testes treated successfully by the method of Durante. This consists in the injection of a 1-per-cent. solution of iodine dissolved with the aid of potassium iodide water, into the epididymis itself. At first only a few drops are injected, the dose being gradually increased, but avoiding any destruction of the tissues. As a rule, thirty injections are sufficient to produce a marked effect for good. The epididymis gets smaller, and fibroid changes are set up in the diseased parts. If strict care is taken to avoid sepsis, no ill results follow, and after the first few injections very little pain. If any local trouble arises, the injections may be given with benefit in other parts of the body. Usually the treatment was carried out on alternate days. The author reports three cases in detail, and says more than a dozen similar cases have been treated and cured as out-patients by this method, which is not only effectual therapeutically, but, by saving the testicle, preserves such internal secretion as this gland may provide and avoids the moral disadvantages of castration. In two cases treated by Durante, where both testes were affected, complete cure re-

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sulted, with return of the power of ejaculation and with semen containing a good number of normal spermatozoa. Certain control experiments on rabbits whose testes were made tuberculous showed indisputably the benefit of the iodine treatment. Good results, as is well known, have been equally claimed for Durante's method as applied to tuberculous joint lesions. (British Medical, July 18, 1908.)

METCHNIKOFF'S SERUM IN ERYSIPELAS.

Dr. Tyrrell reports some cases of erysipelas, and claims that a trial of Metchnikoff's serum seems justified by the similarity of the results obtained. The average dose of serum employed was from forty to fifty minims.

He thinks local measures are not of much avail because the recovery of the patient depends less upon the treatment of the infected area than upon the means adopted to increase the general resistance of the tissues against the disease. The local treatment may therefore be dismissed by saying that the infected part should be kept dry by dusting with powder; calomel, zinc oxide, and starch in equal parts were used in the following cases, and this is usually cooling and welcome to the patient, as it relieves the burning pain so commonly complained of.

The constitutional treatment may be medicinal only or combined with vaccination or the use of sera. He is in favor of the use of Metchnikoff's serum in this disease, especially when combined with the internal administration of quinine, stimulants, etc. The results of the use of antistreptococcal serum seem to have been variable, more striking with some patients than with others. (The Lancet, August 1, 1908.)

OPSONIC SPECIFICITY.

Dr. Hektoen reports his results, and states that opsonins for bacteria and for red corpuscles in human, rabbit and dog serum, may be distinct substances, at least in part, and that normal serum may contain several more or less distinctly specific opsonins for alien red corpuscles. Absorption experiments with heated serum give results that point to the thermostatic opsonic elements in normal serums as the carriers of the specific affinities. Following the injection of antigen there is a specific fall in the index, even when determined with heated serums. The claim that normal serum contains specific opsonic substances is supported by the demonstration that soon after infection or inoculation there occurs a fall in the opsonic index, which is specific for the infecting or inoculated microbe. This specific depression of the index in acute infections must be regarded as the result of infection rather than as an antecedent condition favoring infection, as suggested by certain writers. The presence in normal serum of several more or less specific opsonic substances, and the specific depression of the opsonic index on the entrance into the body of the antigenic material, accord well with the conception that on immunization there is called into existence an increase in the quantity of certain chemical agents which are already preformed in the body. (Journal of Infectious Diseases, June, 1908.)

PELLAGRA.

Dr. R. H. Bellamy, Willington, N. C., finds from inquiries among farmers that decomposed corn, picked before it has matured, is considered a cause of disease in animals (except swine) and in man, and in his section some farmers

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will not eat cornmeal or grits away from home for fear of its being made of such damaged corn. He reports 10 cases of pellagra occurring in his practice, and says he has knowledge of a half a dozen more in his neighborhood. There is little doubt, he says, that the disease has occurred there for many years, as a careful inquiry among physicians brings to light many unrecognized cases. Three of the cases reported were of the chronic type; one died. Seven were acute, all fatal; treatment failing. Bellamy has never seen a patient recover from the acute attack, though the more chronic form averages five years' duration, and may last much longer. (Journal of the American Medical Association, August 1, 1908.)

PLACENTAL TRANSMISSION OF BACILLUS TYPHOSUS.

Dr. Cohoe reports a case of typhoid fever in a woman pregnant fifteen weeks. She aborted and the fœtus was sent to the bacteriological laboratory with the membranes intact. The bacillus typhosus was cultivated in pure culture from both the amniotic fluid and the viscera without contamination. "It is now generally conceded," says the author, "that an infection of the fœtus takes place only through the medium of an injured placenta, and that such injury may exist prior to the disease, or may result during the course of the disease from the action of the toxins in the circulating blood of the mother." (American Journal of Obstetrics, June, 1908.)

PROTARGOL AND ELECTRICITY FOR THE CURE OF PYORRHŒA ALVEOLARIS.

Dr. J. Dencer Whittles, of Birmingham, England, says: "A cure is possible of this distressing malady, which is believed to be an infective ulceration of the periodontal membrane leading to necrosis of the cementum and total absorption of the alveolar processes of the maxilla and mandible, and consequent loss of the teeth. It is, unfortunately, only the better-formed teeth which are affected, hence the loss is more deplorable. During the ulcerative process the cervical lymphatic glands may become enlarged and painful to such an extent as to suggest tuberculous infection, and on that score they have been needlessly removed. I find that the disease may be cured by the local application of protargol with glycerine as a vehicle on the terminal of a battery electrode, using a primary interrupted electric current of such a strength as not in any way to distress the patient. I fear that this troublesome disease is too often overlooked by the physician, and it may probably be the cause of many forms of toxæmia. (British Medical, July 18, 1908.)

RED WINE IRRIGATIONS IN INFANTILE DIARRHŒAS.

Dr. Houssay (Annales Médico-Chirurgicales du Centre, May 2, 1908) recommends red wine in the treatment of summer diarrhœas in infants. In four cases which were very severe and rebellious to other treatment, he used irrigations of hot red wine with good results. In young children he cautions us to use, not the old wines, rich in alcohol, but exclusively the wine of the year, and, furthermore, not to give an enema, but an irrigation, allowing all excess of wine to escape. In chronic enteritis in older children a certain amount of caution should be used, and the treatment should not be entrusted. As early as the year 1800 irrigations of wine were used successfully in the treatment of

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diarrhœa in Cochin-China. The action of the wine is both antiseptic and astringent. The author admits that treatment may not be accepted at once, but pleads that the results alone should be regarded in passing judgment on it, and states that he has had no death from summer diarrhœa since he has been using this method. (La Tribune Médicale, August, 1908.)

SCOPOLAMIN-MORPHINE ANÆSTHESIA IN GYNECOLOGY.

Dr. Sieber reports that in 88 cases scopolamin and morphine were employed for general anæsthesia as a preparation for it. In 32 cases the pulse was increased from twenty to fifty beats per minute, which increase often lasted until the second or third day. In more than half there was a distinct acceleration of the pulse, the cause of which he attributes to the effect of the scopolamin upon the heart. He discontinued the use of the scopolamin, owing to the fact that it is difficult to differentiate its effect from a beginning infection. (Zentralblatt für Gynakologie, Leipsic, June 6, 1908.)

SODIUM CHLORID IN BLOOD.

Dr. Vanderhoof, of Richmond, Va., has tested the chlorid of sodium content of the blood in a number of conditions, with reference to the questions raised of recent years relative to chlorid retention and excretion in certain acute and chronic diseases. He gives in detail his method of chlorid determination, which is an adaptation of the well-known Salkowski-Volhard method of the quantitative estimation of the chlorids in the urine and gastric contents. There would seem to be no reason, he says, why this procedure, as a clinical method, should not apply in the case of the blood, provided that the proteid constituents be first removed, so that the silver nitrate used will not combine with these to form silver albuminates. Therefore, to rid the blood of its albumin, it was decided to precipitate and oxidize these bodies as a preliminary step, and after this the method does not differ from the routine procedure as used in the case of the urine. He summarizes his results as follows: "The sodium chlorid content of the blood and body fluids may be accurately estimated by an adaptation of Volhard's method of quantitative chlorid determination after first precipitating and oxidizing the albumin bodies by nitric acid. The method requires one cubic centimeter of blood, aspirated from a vein, and accurately measured in a volumetric pipette. Clinical applications of this method show a practically constant value for sodium chlorid in a variety of conditions, such as nephritis with and without œdema, uræmia, pneumonia, epilepsy, gastric anacidity, and conditions of cachexia. Variations in the amount of sodium chlorid depend on the relative proportion of plasma and corpuscular elements in the specimen examined, with the highest values in cases of anæmia, and the lowest figures in patients with venous stasis due to heart, kidney, or lung affections. He formulates the following conclusions: 1. The proportion of sodium chlorid in the plasma of the blood is constant in conditions of health and disease. 2. The term 'chloridemia' is unjustified." (Journal of the American Medical Association, August 8, 1908.)

THERAPEUTIC IMMUNIZATION IN MIXED INFECTION.

A. P. Ohlmacher, of Detroit, discusses the problems which confront the phy-

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sician who would apply in practice Wright's method of therapeutic bacterial immunization. He enumerates the organisms usually found in mixed infections, and states that in dealing with them it is necessary to follow the events in the more chronic suppurations by bacteriologic analyses from time to time and to modify the inoculations to correspond with the changes in the bacterial flora of the pus in case the therapeutic response is not satisfactory.

In dealing with tuberculous diseases in which a mixed infection is demonstrable by the culture test, it is proper, he asserts, to combine the inoculations with vaccines of one or more of the complicating bacterial species. This procedure is conducive to good results in treating the suppurations following tuberculous urinary infection, adenitis, synovitis, or osteitis.

Syphilis and a concurrent or a secondary infection with pyogenic bacteria is another condition in which, according to Ohlmacher, therapeutic bacterial immunization finds useful application. (Journal of the American Medical Association, August 15, 1908.)

THIOSINAMIN: ITS EFFECT ON PERITONEAL ADHESIONS.

Dr. Jervino (Gazz. degli Osped., February 2, 1908) has carried out a series of experiments on rabbits and dogs with a view to resolving the above question. He performed laparotomy, and introduced a pledget of gauze, and then injected 3 to 6 cubic centimeters of 15-per-cent. solution of thiosinamin. In sixteen days the animal (rabbit) was then laparotomized again, and the condition of its peritoneum, etc., examined. Another series of experiments were carried out to see whether thiosinamin had any effect in preventing the recurrence of adhesions which had been previously broken down. The author finds that in dogs and rabbits the hypodermic injection of a 15-per-cent. alcoholic solution of thiosinamin lessens in a very marked degree the formation of cicatricial bands round a foreign body introduced into the peritoneal cavity. And, further, that the same drug distinctly hinders the reformation of adhesions which had been previously broken down. No hurtful effect on the general health of the animals was observed, and no pathological changes were noted. Probably the drug would be useful in man as a prophylactic against adhesions where such might be expected to follow a particular operation. (British Medical, July 18, 1908.)

TUBERCULIN: ITS VALUE IN PULMONARY TUBERCULOSIS.

Dr. Hamman, in Archives of Internal Medicine, discusses the tuberculin reaction theoretically, the significance of tuberculin hypersensitiveness, the clinical features of the tuberculin reaction, the criteria of a reaction to tuberculin, the dangers of a tuberculin reaction, the clinical interpretation of tuberculin hypersensitiveness and the clinical method of demonstrating it, and the cutaneous and the conjunctival tests. He summarizes his considerations practically as follows: While tuberculin is a valuable aid in the diagnosis of pulmonary tuberculosis it must be used with care and the results interpreted with caution. The reaction is probably a specific one, but it must be borne in mind that a very insignificant lesion may produce tuberculin hypersensitiveness and the prevalence of such lesions should be fully realized. A negative reaction is considered decisive information, as is also a focal reaction. In the absence of a focal

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reaction, tuberculin hypersensitiveness must be viewed as one phase of the clinical picture, and judgment must not be too much warped by its presence. As a clinical procedure, no routine scheme can be advised, as the method must be altered to meet conditions as they arise. For adults some such scale as 0.2, 0.5, 1, and 5 milligrams may be suggested; for young children 0.1, 0.2, 0.5, and 1 milligram. The cutaneous reaction is too delicate an indicator to be of any value in diagnosis unless the reaction be negative, which it seldom is in adults. The eye reaction gives results more nearly in accord with clinical experience, but by no means of absolute certainty. Hamman does not feel that it can supplant the subcutaneous method. For some time the two should be used together, but not simultaneously. Eye inoculations should precede the subcutaneous by a few days. (Journal of the Amer. Med. Association, July 25, 1908.)

Book Reviews

MEDICAL GYNECOLOGY. By Samuel Wyllis Bandler, M.D. Fellow of the American Association of Obstetricians and Gynecologists; Adjunct Professor of Diseases of Women, New York Post-graduate Medical School and Hospital; Associate Attending Gynecologist to the Beth Israel Hospital, New York City. With Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1908.

An even casual reader is impressed by the lucidity and precision with which the author presents the subject. He describes the causes, diagnoses, methods of procedure, treatment of every disease under discussion and deals only with those cases amenable to non-operative treatment. The many novel and original conclusions are the result of painstaking investigations in which Professor Bandler accumulated his material. He explains everything step by step and leaves nothing to the imagination. Many facts are novel and original, the wide experience of the author being liberally drawn upon. This book treats very thoroughly all the practical imformation relating to gynecologic examination, methods of staining and recognition of the bacteria which infect the genito-urinary tract. He describes in a very forcible and comprehensive manner the various advantages and disadvantages of the instruments together with the manner of using them.

The subjects deserving esteem are Abdominal Massage, Pain, Gonorrhœa, Syphilis, Electrotherapy, etc.

At the end of the chapter devoted to Electrotherapy is a table giving the indications for the use of a galvanic and Faradic current. A section is devoted to constipation in which the hygienic, dietetic and mechanical procedures used in the treatment of constipation are discussed and presented in the most comprehensible form.

All the salient features of the diseases are elaborately dwelt upon and rendered clear and emphatic by liberal repetition and reiteration. In describing the various abnormalities of the pelvis the author has endeavored to show the relation to the psychic health of the woman. With such a knowledge the physician is better able to judge the meaning of symptoms and so favorably combat the disease.

The instruments, apparatus and therapeutic procedures on the patient are beautifully illustrated and are drawn in an accurate and artistic manner. This book will prove a very valuable aid to the student and practitioner of medicine.

Dr. Walter L. Pyle desires to announce his removal from 1806 Chestnut Street to 1931 Chestnut Street. Office hours until 12.30 P.M. Afternoon by appointment.

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MONTHLY CYCLOPÆDIA
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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

THE SICK CHILD.

BY THOMAS MORGAN ROTCH, M.D.,
Professor of Pediatrics, Harvard University.

IN the study of early life from infancy to adolescence we, whose privilege it is to teach the medical students at Harvard, have adopted in our Children's Department one broad principle. This principle, evolved from an experience of many years, is that we should acquire a knowledge of how to protect young human beings at a time when they most need this protection, and in order to do this, we should understand, first of all, normal conditions. Following out this line of thought the student is made to understand that the infant and child are, neither mentally nor physically, the same as the fully developed adult.

This distinction, between *undeveloped early life* and *developed later life,* should be carried still further, for we know that all the tissues, all the mental and all the physical conditions differ widely in the infant during its first year from what they are during its second year. The second year is intermediate between infancy and childhood, and young human beings, on entering upon their third year, become children with different functions, whether they be of brain, or speech, or mouth, or stomach, or extremities.

Mark the differences which take place during these stages of development, for they often determine our decision as to whether we are dealing with a well or with a sick child. Remember that what is a normal condition at one period of life may represent, at a later period, disease, and that, in early life, almost the whole question of health and disease is one of different stages of development according to the age of the child. Remember, also, that there are con-

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tinual changes in the tissues and functions from birth through every month and year until, in the early twenties, the girl and the boy have become developed women and men. The younger the individual, the more rapid are these changes, so that in the early months of life these tissue changes are very rapid but become somewhat slower in the latter part of the first year, which forms the first epoch in the infant's life. The infant next enters into its second year, the borderland between babyhood and childhood, and becomes, anatomically and physiologically, a child in its third year. Then, year by year, the child passes through change after change during the fourth, fifth, sixth, seventh, eighth, ninth, tenth, and eleventh years, until it reaches another borderland between the eleventh and fourteenth years. These years are the period during which the child is beginning to become more than a child, for it is passing from childhood to pubescence until, with new functions, it arrives at the stage of adolescence, and, passing on through successive periods of anatomical growth, finally, with its fully developed tissues, enters upon its completely developed physical life. This developed physical life, when normal, consists of an equilibrium of the tissues in their repair and destruction until, finally, old age breaks down the tissues to a greater degree than it builds them up, and then nature claims her own, and we return to the original atomic conditions from which we started. The fire of early life at birth, which kindled in the beginning, burning faster and faster during infancy, moderating during childhood and adolescence, burning steadily during adult life, waning in old age, and finally reduced at death to ashes—such is the normal life history of human beings, animals, and plants. A short description of what these developmental changes are may possibly be of value in understanding what I am about to say.

The infant at birth is a mere automaton. It feels and tastes and hears moderately well, but it does not see objects, and the function of its brain is not even that of a low-grade idiot. It can move its extremities, but with little strength, with the exception of its hands and fingers, which often show extraordinary force in grasp, so that it has been known to cling so tightly to a small, smooth, round stick that it can be raised from the bed. Some extremists have carried the Darwinian theory so far as to hold that this prehensile grasp has been inherited from some far-back, aboriginal ape-mother, who, in endeavoring to escape from pursuing wild beasts, has allowed her offspring to look out for themselves, and that those who were best able to cling to her hairy coat were preserved, thus proving the survival of the fittest. We have nothing especially to do with this, as it is of no material importance in the study which we are making of the infants of the present day. As the infant grows older, changes rapidly occur. It soon learns to notice light, and, finally, acquires the power of forming pictures on its retina, and then to recognize its caretakers. Although it is born with twenty teeth and is the antithesis of Richard the Third, who is said to have been born with a full erupted set, these teeth have not come through the gum, and are not ready for use. The infant, therefore, has to suck its food which, necessarily, is liquid. As the months go on the stomach, which at birth was only large enough, in most cases, to hold two or three teaspoonfuls, grows rapidly, and by the end of the first

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year is large enough to hold from sixteen to twenty tablespoonfuls. In a few months it is able to support its head alone, and then the spine becomes strong enough to support the superincumbent head, and the infant is able to sit alone. Next it creeps and then, the legs becoming strong enough to support the superincumbent head and trunk, it stands.

This is the anatomical side of the question. Important changes also take place in the infant's physiological conditions. The function of converting starch into sugar is established towards the end of the first year, and this points out to us that starch, in some form such as bread, can be added to its original liquid diet. This represents the infant in its first year.

During the second year characteristic changes also take place. It learns to walk, to articulate, to digest a greater variety of food, and to notice in many ways, which show the coming developed function of the brain. The head grows very rapidly and almost attains its ultimate size. The teeth, which have begun to appear at the end of the first year, come through the gums and become fully developed, teaching us that food which requires a certain amount of mastication is indicated.

The third year shows the development still further of all the tissues and functions, and the infant passes over its first borderland and becomes a child. During the following years the child develops more and more, and its brain becomes capable of accomplishing so much that the resemblance to the adult brain is very evident.

It now comes to a second borderland when, according to the climate or country in which it lives, it develops sooner or later, the female or male signs of pubescence. Then year by year it approaches womanhood and manhood and, finally, when its epiphyses are entirely ossified and connected with its bones, it becomes a fully developed normal woman, or man.

It may be well to speak of some investigations which I am now making in regard to the age of infants and children. I shall say only a few words about this work, but I consider it of importance in connection with what I am about to tell you of the sick child in contradistinction from the well. I have already told you that what is normal at one age becomes abnormal if continued to a later period. What you have been in the habit of considering age in the past is not the true age of the individual. For example, you see a child before you and know that it was born ten years previously. You, therefore, say he is ten years old. From what I believe I shall prove by my investigations, you may be mistaken by perhaps one year, or one year and a half, as to his real age. Ten years is his chronological age, it is true; that is, the time since he was born; but the chronological age is not his true age, practically, for it is the anatomical age which practically determines what that child is able to do without harm, and should do, both mentally and physically.

Supposing that you take a group of twenty boys all, chronologically, ten years old. On examining the anatomical development of these twenty boys it will be found that this development differs greatly in the individual who may show the development of nine years, or, again, of eleven years. I have, therefore, arrived at the conclusion that in respect to classifying them at school and

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to pitting them against each other in athletic sports as a group of boys, considering them all ten years old is wrong, and is conducive of injuring their brains and their bodies.

From the results of my investigations on this subject, I believe that a Roentgenograph of the hand and wrist will be a more practical and safer index of a child's age than will the number of years that it has been born. I believe, also, that in the future it will be safer, in regard to health, for the children to be classified at school by their anatomical rather than by their chronological age. This, however, my time will not allow me to explain to you more fully. What, however, appears most evident, when our young people are chosen to contend with each other in physical contests, is that we can greatly avoid undue strain with resulting injury by placing the contestants in groups corresponding to their anatomical development.

Up to this point I have referred to what we might call normal life in the healthy infant and child. I hope, from what I have already said, that you will recognize the importance of distinguishing between health and disease in early life. I have told you that I am in the habit of teaching the medical student to detect disease by first intelligently understanding what a normal infant and child should be like in health, and how its tissues should look when in normal conditions, as distinguished from diseased conditions. I would also impress upon you how you who, in the future, may deal with infants and children of all ages—you who are non-medical and are not expected to know the finer distinctions between normal and abnormal—should at least appreciate whether a given young human being is really sick or not. By neglecting to make a distinction between health and disease, you may do great harm at a time when harm may be avoided. With the ability, however, to make this distinction, you may influence the community at large, when they are entrusted with the care of children, to see to it that they so understand and treat these children as to give to the world in the future healthy and intelligent mothers, and vigorous and good citizens.

Having once learned to appreciate what a healthy infant or child ought to look like, and how it ought to behave, it will then become much easier for you to recognize how such individuals look and behave when they are sick. It is the very failure to recognize what a well child should be, and that what is well for one age may be sick for another, which makes the acquisition of this knowledge so difficult. However difficult this recognition is, owing to the great variety of pictures of health which may come before you, still more difficult is it to recognize the different phases of beginning disease. It is possible, however, for you to accomplish much in this direction, and it is exceedingly important that you should learn, at least, to suspect disease in order that you may know when to apply to those who can tell you whether the child is well or sick. This is important because, in the early stages of many diseases, the disease can, as is often the case, be taken in the beginning and its progress arrested.

As I have said before, in order that you should be able to appreciate the sick child, and practically to do for that child what is best and will keep him from getting worse, it is absolutely necessary that you should, in a general way,

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recognize the varied pictures of what children, at his stage of development, should look like. Great errors are made in overlooking the fact that a child is sick, on the ground that he is spoiled. It is very difficult to spoil a perfectly healthy child. The buoyancy, cheerfulness, and good nature of young children come from a feeling of general comfort and vigor produced by healthy tissues and normal functions. The healthy child rebounds quickly from a cross word, while a child when sick resents such treatment and dwells upon it. On the other hand, I have noticed that many young babies, whose development is such that they cannot possibly appreciate or understand the various attempts that are made to amuse them before they are practically able to be amused, will, especially by their admiring parents, be thought to be smiling with joy when, in fact, their little mouths are twitching with the pains, slight perhaps, of misguided feeding. This, I believe, was noticed long ago by our poet, Holmes, whose knowledge of anatomy was great, and whose appreciation of anatomical irritation was profound. At times infants and young children become rather dull, and the parents and relations make up their minds that they are dealing with a condition of stupidity. This mistake is often rife with harm for the child. It may be that a small growth in the back of the nose will happen to be at just such a point where there is a connection with the ear, and that the child is gradually becoming deaf, and, not hearing, does not find those who are around him interesting, and consequently finds it more amusing to lead an introspective life. Cases of this kind are certainly pathetic, especially when we consider that merely suspecting disease, and getting advice as to whether there is disease, may obviate years of unhappiness, and if properly treated, the child may become as bright as other children. Again, an infant, especially at a time when it is cutting its first teeth, may suddenly begin to cry apparently with pain. It draws up its legs, becomes rigid, and the mother, thinking it is the food which is at fault, tries to obviate the difficulty by making changes in its food, and takes it for granted that it is perfectly well. In the meantime the infant is suffering agonies, not from a pain in its stomach, but from some other disturbance such as in the ear. Young infants, over and over again, have no way of indicating where the pain is. They have not developed sufficiently to co-ordinate and to point to where the pain is, whether it be in the stomach, or the chest, or the ear. Many a child with pneumonia has pointed, when asked where the pain is, to the bowels, and this gives rise to the suspicion that it is suffering from appendicitis rather than from the real disease, pneumonia.

A baby may be crying hard with a supposed pain in its stomach, and not indicating with its hands any place in particular, but merely moving its hands and arms vaguely up and down, and yet may be suffering from violent pains in its head. The fact is that without any irritation appearing in the mouth a tooth may be the source of the whole difficulty, and a resulting trouble in the ear may be the cause of the pain and suffering. It is not only that obscure symptoms, such as pain and drowsiness, may arise from a connection between the tooth and the ear, but the trouble frequently goes much further, and sometimes, if not recognized early, may produce disastrous consequences. In infancy and early childhood there is a little opening between the ear and the mem-

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branes of the brain. In this way there is a direct connection between the ear and the interior of the skull, through which congestion of the vessels of the ear may be carried to the membranes of the brain, and from which, later, an infection common in the ear in young children may be carried to the membranes of the brain and produce a meningitis. Symptoms of this trouble may be very slight at first, and the attendants may suppose that the child is merely rather more sleepy than usual and a little dull from fatigue. Thus failing to recognize that the infant is in the beginning of a serious sickness, they lose the opportunity of averting at once the beginning disease by not ascertaining that the ear is the seat of the trouble.

It is well to understand that different children have different temperaments, and that some cannot help being born with nerves which are easily excited, while other children are born with nerves quiescent. You should understand that by your not appreciating this, and by not being careful to quiet the nervous child and allow the calm child to have more exciting surroundings than the other, that you may produce symptoms which may simulate sickness. The child, under these circumstances, is sick, but you are making it sick. The cry of an infant who is too young to speak or to indicate what is troubling it, is of very great consequence in order that you should interpret whether the child is sick or not. A perfectly well baby may cry lustily, merely indicating by its cry that it is hungry, or that it is sleepy and does not wish to be disturbed by anything of which it disapproves in its surroundings or treatment. The cry again may indicate pain, but differs when it has a pain from indigestion from the merely hungry cry. This, again, differs from the intense cry of earache. I have lately met with an instance where a young mother, almost from the beginning of baby's life, seemed to appreciate what her different cries meant, beyond what is usual, and it would be well for you if you could acquire the same intelligent appreciation of what is going on in an infant's life. At birth the infant just spoken of cried with hunger, and, being vigorous, it used both arms and legs, endeavoring to kick its mother into attention to its desire for food. One day it began to cry in a different tone, still, however, kicking as before. The mother ascertained that it was the cry of indigestion producing pain in the stomach. This cry, at intervals, continued for many weeks, and then, when the food was regulated, ceased. A short time afterward, however, the baby cried again, and although it did exactly the same thing with its legs, and did nothing whatever with its hands to point toward the place of irritation, the mother again recognized the difference from the previous cries, and, with further advice, found that the baby was suffering from severe earache produced by irritation at the root of its first tooth, which was just coming through the gum, but otherwise presenting no symptoms of swelling, redness or tenderness. There are many instances illustrating that the child is really sick where the caretakers believe that it is obstinate or bad. Under the latter circumstances the child is punished undeservedly, and with the result of increasing the disease from which it is suffering. The first symptoms of that dreaded and almost universally fatal disease, tubercular meningitis, may be that the child gets frightened easily, and

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from being good-natured, begins to be cross. Many a mother has regretted that she had punished her child under such circumstances, and that she had not asked for advice at a time when it was most necessary. In the disease chorea (St. Vitus Dance), the early symptoms may be only slight winking of the eyes, getting embarrassed more than usual before strangers, a restless condition, not sitting still when told to, or an awkward use of the knife and work. These children, over and over again, are punished and disciplined because they are supposed to be disobeying, while, really, they are unable to obey.

Many children are pale and listless; show no interest in their usual play, and for this are called lazy. Others show no desire to go to school or to mingle with their schoolmates, and are called bad and obstinate and punished for this. Others again are made to go to school simply because they have no other symptoms which the parents think would show that they were sick, not seeing that they really needed kind treatment and relief from school, rather than to be reproved. In reality, in many of these cases, neglect of the teeth, a lack of purity of the mouth, or a small area of infected tonsil, not sufficient to draw attention to the throat, may be the source of a septic poisoning, of mild grade, indeed, but sufficient to make them anæmic and languid. Of great consequence, therefore, in these cases, is the recognition that the child is sick.

There is much difference in the vitality of young children, naturally, and this is especially shown in infants. This, however, should be understood, and you should appreciate that where a bath of a certain temperature is usually indicated, or where a certain degree of temperature in the open air may be what is good for a number of children, this may, in a perfectly healthy infant, be of injury on account of normal vitality being less in some than in others. You should know that, in many cases, warm, fresh air in a nursery is better for certain babies, on account of their individual vitality, than the extreme cold air which is, at present, the fad of the day. Infants are, at times, supposed to be sick when they are merely being exposed to too low a temperature by being placed at an open window in extremely cold weather. This in no way implies that fresh, cold air is not good for many healthy infants, but merely that each healthy infant should be treated in the way which is best adapted to it as an individual. The younger the child or baby, the more it should be protected from seeing too many people, and from becoming over-excited by people who endeavor to amuse them far beyond what comes within the limit of common sense. This, however, must not be carried to the senseless extreme which is also met with among certain people who cannot understand that some variation is indicated in all rules regarding early life.

In many cases of slight sickness from indigestion, an intelligent withdrawal of all food for a period of perhaps eighteen to twenty-four hours, will be found to be the best treatment, and the most rapid method of restoring the equilibrium of the digestion. There is no danger of starving the child in these cases. On the contrary, much more harm is done by persuading the child to take more food than it ought to. One of the most prolific causes of making a well baby or child sick is the entrusting it to an ordinary old, nursery maid whose experience with many babies is the experience of ignorance. A baby

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should always be in the hands of a healthy young nurse who has been trained, not only to handle babies, but to be absolutely neat and ready to obey orders. The ignorant, self-sufficient, untrained nursery maid, as a despot in the household, is as productive of evil as the demagogue in politics. A great deal has been said, and usually with derision, about the mother-in-law. Whether what has been said is true or not, or depends upon the perverted ideas of her son-in-law, is a matter of record, but in the case of the baby, especially the first baby, I would ask the young mothers not to always give way to the grandmothers. The grandmothers are full of kindness, admiration, and good intentions, but have usually forgotten how they felt themselves at the time they had their own first baby, and what they did for it. The young mother knows, by intuition, many things about her baby which no others can tell her. If intelligent, she seeks advice from those who, by training, are most fitted to instruct her as to how she shall prevent her child from being sick, or can tell her that it is sick when some disease is developing.

I have only one thing to say in regard to the physician who is sent for when a child is recognized to be sick. Do not hold him up as a bugbear to the child, or as a threat of what he will do unless the child minds the nurse or parent. This never can do any good, and always does harm in preventing the physician from being on good terms with the sick child who is fretful, and, at any rate, does not like to see a stranger. Also, when the physician is examining the child do not interfere and try to help him. If the physician knows his business he does not wish to have any help whatever, unless he asks for it.

GRADUATED LABOR IN PULMONARY TUBERCULOSIS.

By JOSEPH WALSH, M.D.,

Assistant Medical Director of the Henry Phipps' Institute.

PHILADELPHIA.

THOUGH we are obliged to give credit to Europe for many of the theoretical ideas and much of the practical work in connection with medicine, occasionally we do something on this side of the water worthy of notice. When this is done and Europe takes the credit for it, we naturally feel a little chagrined.

In the *Lancet* of January 25, 1908, Dr. Marcus S. Paterson, of Frimley Sanatorium, writes an article describing how patients work at the sanatorium and the effect of this work on the pulmonary condition. Frimley Sanatorium has been established only three and a half years, and the idea of working the patients began some time after the establishment. White Haven Sanatorium has been established seven years, and the patients have been working since its opening. In the White Haven Sanatorium patients were originally put on work, partly, at least, to keep down the cost of maintenance; but the good results to the patients themselves were seen within the first two years, and since

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then work has been insisted on more for the patient's own good than for the saving of expense to the sanatorium. Since the two objects can be accomplished at the same time, however, we still have the patients do the ordinary sanatorium work, and have the work graded to suit their ability. Our grades are as follows:—

A	
Making paste board sputum cups.	Peeling potatoes, apples, etc.
Polishing brass and silver.	Picking up paper on lawn.
Mending linen (hand sewing).	Shelling peas and beans.
B	
Carrying dinners to cottages (distance, about 300 feet).	Cleaning electric light globes.
Sweeping porches and kiosks.	Cleaning beds.
Clerical work in office.	Wiping on window sills, etc.
Keeping fire in cottages.	Attending to Superintendent's cottage.
Helping serve lunches and washing lunch dishes.	Gathering fruit and vegetables.
	Making beds.
	Mending linen (machine work).
C	
Assisting driver on wagon.	Chopping kindling wood.
Assisting receiving clerk with milk and freight.	Running steam pump.
	Carrying dinners to pavilion (distance, about 600 feet).
Mowing and raking lawn.	Cleaning windows.
Carrying blankets and dress suit cases from fumigating room to infirmary.	Mopping cottage rooms.

The principal benefit derived from this plan is that it makes the patient capable of carrying out his ordinary avocation immediately on returning home. The White Haven Sanatorium is intended for poor people, and unless they were in condition to work when they left the sanatorium, the aim of the sanatorium would be only half accomplished. Moreover we have found that by thus showing the patients how to work and carry out their regime at the sanatorium, they are prepared to do the same at home, and so remain in a working condition a longer time.

This plan of work has not only been carried out, but has been commented on several times. Flick, to whom the credit is due for the scheme, commented on it in the Fifth and Seventh Annual Reports of the White Haven Sanatorium; Landis described it in the *Journal of the Outdoor Life,* May, 1908, eight months before Dr. Paterson's article; again, in an address before the Pennsylvania Tuberculosis Exhibition in November, 1907 (published in the *Medical Record,* February, 1908); and I wrote as follows in the MONTHLY CYCLOPÆDIA OF PRACTICAL MEDICINE, vol. x, page 53, 1907 (three months before Dr. Paterson's article):—

"On admission to the White Haven Sanatorium the patient is sent to the infirmary for two weeks in order to determine exactly his condition by frequent estimation of the temperature, etc., and in order to avoid infection of others in the sanatorium in case he has brought an acute infection with him. If at the end of two weeks the patient still manifests a temperature over 100° F., or a very rapid pulse, he is kept there until these symptoms subside. As soon as he leaves the infirmary and enters the general sanatorium, he is put on one hour's work a day. He does not leave the infirmary, therefore, until it defin-

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itely appears that he is capable of doing this hour's work without harm to himself. The work is usually increased five minutes a day and rarely ten minutes a day, until he reaches eight hours' work. He is kept at eight hours' work for one month, and then sent home with the idea that with proper care he can do eight hours' work a day at home.

"With signs of acute cold or any acute condition he is put on absolute rest, and if the period of rest is protracted his work is gradually increased again. Practically all the work about the sanatorium is done by the patients working in this fashion. It usually requires about six months to bring the patient to a point where he works eight hours a day for one month.

"In other words, we believe that absolute rest is a prime necessity when the patient shows acute symptoms or is badly run down; but since these patients are poor and must work when they leave the sanatorium, we believe it advisable to show them how to do it properly without injury to themselves.

"In the private sanatoria about White Haven, where the visiting physicians to the White Haven Sanatorium send cases, the same ideas are carried out, though instead of work the patients are put on walking exercise.

"I do not know of any other sanatorium in the world in which the patients are put on such systematic exercise, except Brehmer's, in Görbersdorf.[1] Here they are put on graduated mountain-climbing from the day of admission. If the case is very acute, showing high temperature, or rapid pulse, or extreme debility, of course it is put to bed even in Brehmer's Sanatorium; but it is probable that exercise is started much earlier than in any other sanatorium in the world.

"In the majority of other sanatoria in the world which I have personally visited, comparatively little insistence is placed on exercise. In Rompler's Sanatorium at Görbersdorf, in Falkenstein, and in many others, patients remain on rest during their entire stay, even though they remain a year. It appears to me that practically the same theoretical ideas relative to rest and exercise prevail everywhere, but in the majority of cases it is only the rest that is insisted on.

"In Frimley Sanatorium, which is practically the country branch of Brompton Hospital, London, and which receives the same class of patients as the White Haven Sanatorium, they endeavor to have the patients do a certain amount of light work, like gardening, etc., but I understood without great success. They claim that the class of patients coming there, many of them clerks in London counting-houses, think it *infra dig.* to work in a sanatorium, and would rather leave than work. This seemed to be the view in the public sanatoria throughout Europe generally, like, for instance, in Bournemouth and Beelitz. I think the same is true also of the majority of the public sanatoria in the United States.[2]

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[1] It is since this time that I visited Walther's Sanatorium at Nordrach and realized the amount of exercise he prescribed.

[2] I visited Frimley and talked with Dr. Paterson about work at White Haven Sanatorium and work at Frimley in September, 1905.

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"In the private sanatoria in Europe, like Falkenstein, Hohenhonnef, and Rompler's, patients are sometimes found playing light games like croquet, but scarcely anything more violent than this.

"In other words, in sanatoria generally, rest is not only believed to be an essential, but exercise is, as a rule, so relegated to the background that it is scarcely in evidence."

It is true, however, that the graduated labor at Frimley has been gauged more scientifically (even if not more practically) because gauged by the opsonic index. Moreover at Frimley it is claimed that the work helps to promote arrest. All we claim at White Haven is that the patient is put in better physical condition to stand labor and to hold his arrested condition. From what I have seen clinically, I would not be willing to say that arrest was hastened by work, but only that the arrested condition was made more stable.

In addition I believe that too much insistence can be placed on exercise. On account of the general misunderstanding among the members of the profession in regard to the indications for rest and exercise, considerable injury has been done to patients by insistence on exercise when positive contraindications were present. Though, therefore, exercise properly regulated, when not contraindicated, "hardens" the patient, under any other circumstances it does harm, and the dictum still remains true that rest is the most important feature in the cure of tuberculous cases.

LARYNGEAL COMPLICATIONS OF TYPHOID FEVER.[1]

By JOSEPH S. GIBB, M.D.,

Professor of Laryngology and Rhinology Philadelphia Polyclinic; Aural and Laryngeal Surgeon to the Episcopal Hospital, Philadelphia.

In the course of typhoid fever the larynx may become the seat of disease. The frequency of the involvement of this organ varies according to the severity of the epidemic, and perhaps also according to the sources from which the statistics are drawn. Friedreich[2] believes the percentage is higher if statistics are drawn from all cases, including post-mortems, than they would be if drawn only from those under clinical observation. Probably from 2 to 3 per cent. of cases suffer from laryngeal involvement during the course of typhoid fever. The severity of the infection of the larynx varies from a slight disturbance of the function to a serious and often fatal complication. For purposes of a more careful observation, but in an arbitrary and imperfect way, Friedreich divides the affections of the larynx during typhoid fever into three classes: (1) the catarrhal, (2) the ulcerative, (3) the paralytic. Since this division offers a convenient way of treating the subject it will be employed in these remarks.

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[1] Read at a meeting of the Section on Otology and Laryngology of the College of Physicians of Philadelphia, March 18, 1908.

[2] Friedreich: "Rhinology, Laryngology and Otology in General Medicine."

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The simplest type of the first division is the form which is frequently observed, namely, a slight sore throat accompanied by hoarseness and a sharp, dry cough occurring during the active febrile period of the disease. The laryngoscope in this case shows a larynx intensely red, dry, and glazed—the cords red—the picture of an acute laryngitis. The prognosis of such an attack is good—improvement occurring as the disease to which it is due improves. Another type of this same inflammatory class, but of more serious import, is one in which the inflammatory process seems to dip below the mucous membrane and involve the submucous tissues. In these cases, in addition to the picture already presented, we have more or less interference with the respiratory act, depending upon the amount and site of the submucous infiltrate. In consequence, there is more or less stridor. The laryngoscope is a valuable aid. It reveals the presence of the thickened mucous membrane and its site.

Clinically, in my experience, there is much diversity in the severity of these cases in accordance with the site of the infiltrate, those above the cords being of much simpler type than those subcordal. This particular form of laryngitis, unlike the simpler form, occurs after the severe febrile symptoms have abated; usually it is ushered in by a sudden rise of temperature when the thermometer has been running at or near the normal point; the onset is usually gradual. In addition to the elevation of temperature, there is increasing hoarseness, even aphonia and increasing stridor, which sometimes becomes alarming. So far as the physical appearance of the parts are concerned, similar conditions are observed in other febrile states, notably in measles and influenza, and has been denominated œdematous laryngitis, infectious laryngitis, etc. This type is, without doubt, very different from the ordinary acute inflammatory states in the larynx, and seems to possess its virulence and activity because of a specific infection. The course of this œdematous laryngitis is likely to be prolonged, and persists long after convalescence is well established, and in some instances leaving permanent effects noticeable by a limitation of the movements of the intrinsic muscles of the larynx and a consequent impairment of the voice. The most distressing and alarming effect of the infiltration is an encroachment on the respiratory channel. The following case, recently seen in my service at the Episcopal Hospital, illustrates this type of case:—

J. H., aged 21. Ill for seven weeks with a severe attack of typhoid fever, during which she has suffered many complications. Is still very weak and nervous, and has a temperature range from 99½° to 102°. For several days has been aphonic, and has severe paroxysms of cough. Dyspnœa has grown more and more severe. Cyanosis at times, and especially after a paroxysm of cough.

February 20, 1908. An attempt was made to examine the larynx, but the movements of the larynx and trachea were so violent and dyspnœa so marked that no satisfactory result was obtained. The symptoms were so urgent that it was deemed imperative to give immediate relief, either by tracheotomy or intubation. Because of the difficulties of a tracheotomy in the rapid excursions of the trachea, intubation was decided on. This was accomplished

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without difficulty. The tube caused considerable laryngeal spasm, but after an hour this was quieted and the patient rested much easier. During the night the string attached to the tube disappeared, and the breathing became oppressed. The resident made an effort to find the string and the tube, but was unsuccessful.

February 21, 1908. Patient is breathing more quietly and speaks with a hoarse voice. Cough is stridulous. Examination of the larynx is made with comparative ease. The mucus membrane of the larynx is infiltrated, and especially on the right side, so that but a narrow chink remains for respiration. No view of the cords obtained. The tube is not in the larynx.

February 28, 1908. Tube passed per rectum, eight days after its disappearance. The œdema of the larynx has markedly diminished, and the laryngeal symptoms have abated.

March 2, 1908. Smear taken from the larynx shows Kleb-Loeffler bacilli in pure culture. No clinical evidences of diphtheria. Infiltration in larynx gradually diminishing. The presence of the diphtheria bacillus in this case is believed to be purely incidental.

The second form of laryngeal involvement in typhoid fever, namely, ulceration, occurs either in the febrile or in the post-febrile stage, and usually in the severer cases; these ulcers are superficial. In the larynx the most common sites are the laryngeal surface of the epiglottis over the arytenoid cartilages and on the posterior wall. Similar ulcerations are seen on the nasal septum and the lateral pharyngeal walls. The appearance is that of a small, superficial ulcer, covered by a thin, whitish deposit, with little or no surrounding inflammatory areas, much the same as is seen in an ordinary herpetic ulcer. These ulcers seem to be merely local necrotic conditions of the mucous membrane. They sometimes show a tendency to run together, forming a large, superficial, ulcerated surface, presenting the appearance of a tubercular ulceration, but without the accompanying infiltration of the surrounding tissues, as is observed in this latter condition.

For the most part the cases of ulceration which have come to my notice have been hospital cases, and have occurred in the post-febrile stage of the disease, and often after a protracted siege of the fever with numerous complications, which have tended to still further diminish the vitality and resistive power. The following case will illustrate this type:—

Jennie H., aged 18, a patient at the Episcopal Hospital, was referred to me for examination because of aphonia and cough. She has been transferred to the isolation ward of the hospital because a culture from the pharynx revealed the presence of Klebs-Loeffler bacilli in pure culture. The examination of the pharynx for the bacilli was made, because at this time a case of diphtheria had developed in the ward in which she was located, and every patient's throat was examined as a matter of precaution.

At the time of the transference to the isolation ward she was convalescent after having passed through a very severe attack of typhoid fever, with a number of distressing complications. The examination showed a small, superficial ulcer at the base of the arytenoid cartilage, with no infiltration of the edges

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or surrounding parts; the cord of this side moved very imperfectly, and prevented a proper closure of the glottis in phonation. The voice was husky, almost a whisper; there was only a moderate febrile rise. The progress of this case was uninterrupted to recovery, which took place in about two weeks. There were never any clinical evidences of diphtheria though, because of the bacteriologic examination, a very careful watch was maintained for their appearances.

In strong contrast with the simple form of ulceration are the cases in which the ulceration extends into the deeper tissues. So strong is the dissimilarity that it seems improbable that they are the result of the same pathologic process. Deep ulceration of the larynx rarely occurs at any other stage of the disease than the post-febrile, and then only in the protracted severe cases. Some writers have ascribed these ulcers to the long dorsal decubitus, but Friedreich is inclined to doubt this explanation. There is a deep, local necrosis. Since thrombosis is not an infrequent complication of typhoid fever, is it not possible that the formation of these necrotic areas in the larynx are due to local thromboses?

The symptoms are much more urgent than in the simple form, the most alarming being the interference with respiration. In the cases of this nature which have come to my notice, I have rarely been able to locate the ulcer, but rather have presumed its existence. The reason for this is apparent, for unless a laryngoscopic examination be made at a very early time in the course of the disease, the œdema will have obscured the site of the ulcer. As in laryngeal tuberculosis, we are obliged to presume the existence of an ulcer between the arytenoid cartilage in those cases in which the pear-shaped œdema of these bodies overlap and obscure the ulcerated site, so in the typhoidal ulcers in the same location we are obliged to resort to the same means.

From the similarity of the symptom œdema, some confusion of diagnosis may result between cases of ulceration and those previously described, in which the symptom œdema occurs as a result of submucous inflammation and without ulceration. Of course the recognition of the ulcer at once clears the diagnosis, but cases will occur in which the diagnosis must remain *sub-judice* for a considerable time.

The ulcerative forms of œdema are much more serious than the simple inflammatory, and while most of the latter ultimately terminate in recovery, a large proportion of the ulcerative form terminate fatally. The degree of severity of this form is largely dependent upon the depth and extent of the ulceration; those cases in which the cartilages of the larynx are attacked giving rise to perichondritis with abscess, seldom recover. Deep ulcers are seen most frequently at the base of the arytenoid or on the posterior wall between these bodies; therefore when perichondritis results it is the base of the thyroid or the cricoid cartilage which are involved. These cases are the most distressing and fatal of the laryngeal complications of this disease.

Several years ago a case of perichondritis of the larynx came to my notice. It was an unusually severe case of typhoid fever with pneumonic complication and much hyperpyrexia. In the seventh week from the beginning of the febrile

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attack, and when the patient laid exhausted from the attack through which he had successfully passed, the voice became hoarse and the temperature, which had nearly reached the normal point, shot up. The symptoms became more and more urgent until it became necessary to intubate. The destruction of tissue continued, abscesses formed in the larynx, and he soon became septic. Multiple abscesses took place in various portions of the body, and he died of general septicæmia one month from the beginning of the laryngeal symptoms. It was found impossible to remove the tube from the larynx, and it remained there until his death. The correctness of the diagnosis in this case was verified post-mortem.

The third form of laryngeal complication is that in which the muscles of the larynx are deprived of their function because of paralysis. The various paralyses of the laryngeal muscles occur usually after the febrile stage of the disease, but not invariably so, since some of the inflammatory or ulcerative cases are attended by loss of mobility of the cords—and in these, which occur during the febrile stage—after the inflammation or ulceration passes away the paralytic condition persists for a time. Any or all of the intrinsic laryngeal muscles may be affected by paralysis. The severity of the case varies in accordance with the group of muscles involved. It may result in a temporary loss of function, or again, a permanent impairment of the voice, and still, again, in conditions which end fatally.

There is some difference of opinion among authors as to the relative frequency of paralysis of the abductors or adductors in typhoid fever. My own experience has been that adductor paralysis is by far the more common. It is no unusual matter to have in the wards of the Episcopal Hospital, where a large number of typhoid fever cases are treated yearly, a case of partial aphonia—which is due to a failure of one or other cord to meet its fellow in the median line during phonation—in other words, paralysis in adduction. While these are undoubtedly the most common of the paralyses, they are also the most transient and attended with less serious consequences.

As convalescence is established the immobility of the cord gradually passes away, and the voice is soon restored to normal. In some cases, however, this fortunate termination is delayed, and in still others the paralytic condition never entirely passes away, and the voice remains permanently altered.

The picture presented in abductor paralysis, and especially in the bi-lateral cases, is totally different from that already portrayed. These are the rarer cases and the most serious. Not only is ultimate recovery of the voice seriously threatened, but life is in great danger, especially in the bi-lateral cases. The immobility of the cord in the median line leaves but a small chink through which the respiratory act is performed; hence this is accomplished with great difficulty and much noise, and especially in inspiration. The interference with respiration is so great as frequently to necessitate immediate tracheotomy or intubation, and even this offers but a temporary respite, since it not infrequently becomes difficult to discontinue the use of the tube, the alarming symptoms reappearing so soon as the tube is removed.

The true pathology of these paralytic states in typhoid fever is a matter of

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much diversity of opinion. The scope of these remarks does not include this feature, nor will the time permit. The condition seems similar to the various paralyses which follow diphtheria, and are apparently due to an influence of the toxins on the nerve center or innervation of the larynx.

1907 Chestnut Street, Philadelphia, Pa.

REPORT OF A CASE OF INTESTINAL OBSTRUCTION.

By LIDA STEWART-COGILL, M.D.,

THE various causes of intestinal obstruction, with their attending distressing symptoms, are well known to all present, also the different methods of treating such conditions according to the cause, and I have no new cause, symptom, or treatment to present to-night, but I wish to report a peculiar and, to me, most interesting condition following an inguinal colostomy, performed for the immediate relief of urgent symptoms, in a case of carcinoma of intestine.

When a colostomy is performed, if the incision in the bowel is made above the point of obstruction, we expect to secure drainage through this opening, and passage of gas and fœcal matter, affording relief from the distention, and we expect this to continue so long as an opening in the bowel exists. In the case I report there was immediate relief from distention—as gas escaped freely—but there was no escape of fœcal matter at any time, neither any fluid, not even bile-tinged mucus; nor did gas escape after that following the incision. A drainage tube was introduced and dressings applied, but they remained perfectly dry.

The saline irrigations returned perfectly clear. The nurse reported free escape of gas by rectum, and small bowel movements for a few days after operation.

Why did not drainage through the incision follow? The opening must have been in the intestine or why the escape of gas following incision? If an opening in intestine, why not some discharge of fluid, or, at least, some bile-tinged mucus?

The case is as follows:—

Mrs. S., widow, aged 68; history of chronic constipation. A year ago last June patient was attacked with vomiting and severe abdominal pain—pain in abdomen lasting two weeks—some distention, but not excessive; patient gradually regained strength, lost considerable flesh. Last May she had similar attack, except was not nauseated; pain lasting five weeks. In July another attack occurred, lasting three weeks. During this time a tumor was felt on left side of abdomen. In October was the beginning of present attack, resulting from a bad fall on her back; she gradually grew worse, constipation more marked, and distention increasing. When I was called found excessive abdominal distention, no vomiting, tongue dry and glazed; obstipation, pulse weak, of poor quality. I immediately began stimulating treatment for heart, and

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ordered high enemata, since they had not been tried, with very good results at first; but as patient failed rapidly, sent her into hospital, and after consultation with Dr. Wm. J. Taylor, a left inguinal colostomy was performed (the patient being too weak to stand extensive operation); bowel was found adherent to abdominal wall. A fair-sized incision was made in the bowel, escape of gas followed, and relief from distention; no fœcal matter or fluid escaped through opening; drainage was introduced, and dressings applied.

Abdominal palpation revealed numerous masses in the intestines (as stated before, there was no drainage). Saline injections returned clear; no passage of gas after the first. After a few days distention returned and patient died few days later.

Owing to my illness at time of patient's death, an autopsy was not secured. I trust the members present will be able to explain cause of non-drainage.

The Therapeutics of Diseases Which Involve the Internal Secretions

MERCURY IN THE TREATMENT OF TUBERCULOSIS—ITS MODE OF ACTION—A WARNING.

By CHARLES E. de M. SAJOUS, M.D.
PHILADELPHIA.

Surgeon Barton L. Wright, U. S. N.,[1] while on duty at a temporary camp for the tuberculous connected with the United States Naval Hospital, at Pensacola, about three years ago, had under his care a number of cases in which syphilis and tuberculosis were present concomitantly. On placing these cases under mercurial treatment, the pulmonary lesions showed signs of improvement exceeding greatly that usually obtained in cases of tuberculosis treated under corresponding or even more favorable climatic conditions. Dr. Wright is therefore disposed—and rightly so—to ascribe the beneficial effects observed, including gain in weight, reduction of the temperature, slowing of the pulse, disappearance of laryngeal and pharyngeal ulceration, and the marked improvement of advanced pulmonary lesions observed, to the action of mercury.

The use of this metal in tuberculosis has already run the gauntlet of clinical experience and its disappearance from the horizon some years ago betokens a similar fate for the method employed by Dr. Wright. Advocated several decades ago by Baumes and Ramazzani, and more recently by Havilland Hall[2]—who urged that "we have in the different preparations of mercury,

[1] Barton L. Wright: New York Medical Journal, Aug. 29, 1908.
[2] Havilland Hall: American Journal of the Medical Sciences, Nov., 1889.

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administered to phthisical patients in *small* doses, the most potent weapon with which to combat this most malignant foe of mankind"—Martell,[3] Dochmann,[4] Giampetro,[5] Stritzower,[6] Weill,[7] and many others, it was condemned by various authorities, including Cullen. In brief, Daremberg's declaration that "the history of mercurials in the treatment of pulmonary tuberculosis is made up of a long series of deceptions," is an appropriate epitaph when the question as a whole is judged from the narrow standpoint of prevailing doctrines.

How account for the antagonistic results which have inspired such differences of opinion? Thirty years' work in the medical profession has led me to accept with more confidence than the average medical man perhaps, the clinical reports of those who obtain encouraging results, and to ascribe to imperfect technique or injudicious dosage most of the unfavorable observations recorded by their critics. Indeed, my labors as editor of the *Annual of the Universal Medical Sciences* have imposed the conclusion that owing to this untoward feature of modern practice, and the multitude of valuable suggestions it has relegated to oblivion, Medicine had become a veritable graveyard for valuable ideas, including many practical suggestions which would have bestowed incalculable blessings upon suffering humanity. Nor are the multitude of clinicians who have contributed to the downfall of many promising remedial methods subject to censure; the true cause is one which lies at the foundation of therapeutics: the prevailing obscurity concerning the mode of action of drugs, and of mercury in particular in the present connection. The phenomena this agent awakens are familiar to everyone, but *how* these phenomena are produced, text-books do not tell us. It is this phase of the question that my investigations into the functions of the ductless glands seem to me to have elucidated; and, in doing so they have shown not only why mercurials should be of great value in tuberculosis, but also how their injudicious use could be productive of much harm in this disease.

In the second volume of "Internal Secretions" (page 1147), to which the reader is referred for evidence in support of the conclusions herein submitted, I urge that "the various salts of mercury owe their therapeutic value to the energy with which they stimulate the test-organ. In *minute* doses they promote nutrition, *i.e.*, act as a tonic because, by stimulating the test-organ, they increase the secretory activity of the adrenals, and enhance, therefore, general oxygenation and its logical corollary, the power to combat infection." That this meets a prominent morbid feature of the disease is emphasized by the stress laid by a clinician of vast experience in this connection, Dr. C. Theodore Williams, of London, at the recent Tuberculosis Conference in Philadelphia (September 25th), that "the history of consumption had shown that more could be accomplished by measures which augment and invigorate the resisting powers of the patient, than by those which aimed at destruction of the pathogenic germ."

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[3] Martell: Wiener medizinische Wochenschrift, July 1, 1888.
[4] Dochmann: Therapeutische Monatshefte, Sept., 1888.
[5] Giampetro: Gazzetta degli Ospedali, No. 140, 1895.
[6] Stritzower: Wiener klinische Wochenschrift, Nu. 3, 1894.
[7] Weill: Therapeutische Monatshefte, Nov., 1901.

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It becomes a question, however, whether the invigorating influence of small doses of mercury does not also include destruction of the pathogenic organism. That such is the case—though not directly, as is now believed—has likewise been made clear by my investigations. The increased oxygenation and metabolism referred to above is but the precursor of a far more important process: that of enhancing the bactericidal properties of the blood. In other words, the increased oxygenation of all organs brought about by the mercury causing these organs to act with greater vigor "the function of the pancreas, the thyro-parathyroid apparatus and the leucocytogenic organs is correspondingly activated, the quantity of auto-antitoxin [and I would add, the proportion of phagocytes] in the blood is augmented." The product of the thyro-parathyroid bodies being in the light of my views (and as shown by chemical concordance) Sir A. E. Wright's opsonin, while the pancreatic product is the recognized homologue of Metchnikoff's cytase and Ehrlich's complement (the adrenal secretion being Ehrlich's amboceptor) we have available in the blood an increased volume of those substances which have now incontrovertibly been shown to be the defensive agents with which the body antagonizes infection.

In the presence of these facts, the beneficial influence of mercury observed by the above-mentioned authors finds their explanation: *the drug increased the bactericidal properties of the blood.* But a feature of cardinal importance must be emphasized in this connection: We have seen that it is to *small doses* that Havilland Hall refers when he characterizes mercury as our most efficient weapon; it is also by means of small doses that all the authors enumerated obtained their beneficial effects—it is also with moderate doses administered at prolonged intervals that Surgeon Barton L. Wright obtained his good results, as shown by the following quotation from his article in the *United States Naval Medical Bulletin* for July, 1908:—

"Just before the injections are to be given distilled water is boiled for at least twenty minutes. The solution is then made so that 0.64 centimeter (*m* x) will be equivalent to gram 0.013 (gr. ⅕) of mercury succinimidium. The syringes and needles are to be boiled for twenty minutes. The skin of the patient's buttocks is to be scrubbed with hot water and tincture of green soap, then washed with alcohol, followed by ether, and then in turn by a solution of bichloride (1/3000). The surgeon's hands are to be prepared as for any operation and sterilized rubber gloves are worn. The patient being in a prone position on the table, the needle is thrust deeply into the muscle tissue by a quick, downward plunge. If no blood escapes from the butt of the needle, the syringe is put in place and the drug injected. If blood escapes, a vein has been punctured and the needle is therefore withdrawn and inserted at another place.

"It has been our custom to start with gram 0.013 (gr. ⅕) of the drug and to repeat the injection *every other day* until fifteen injections have been given; then to give gram 0.026 (gr. ⅖) *every fourth day* until fifteen more injections have been administered; then to give gram 0.039 (gr. ⅗) once a week indefinitely. It is advantageous to give short courses of potassium iodide at varying intervals in conjunction with mercury.

"Now and again in one or two cases it has been found impossible for

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various reasons to administer the drug by injection, and in those cases mercury has been given by mouth in the following combination:—

℞ Hydrarg. chlor. corros. ..... 0.324 grams.
Tr. gentian. comp. ..... 240.00 grams.
M. Sig.: Teaspoonful in wine glass of cold water t. i. d., 20 minutes before meals."

This was not found to act as rapidly, however, as the injections.

The foregoing statements suggest the conclusion that it is because of the employment of large doses that the antagonists of mercury in tuberculosis owe the results which have led them to condemn its use. The conception of the curative process I have submitted readily explains the production of untoward effects—nay, death itself—by such doses.

The effects of the large—or frequently repeated—doses are familiar to every one. The term "cachexia" applied to mercurialization recalls suggestively a corresponding state in tuberculosis; the rapid emaciation that attends mercurial intoxication also betokens a kindred process, one of active destruction. This is especially evident in the blood, which becomes watery owing to the destruction of its elements. "Its solid constituents are notably diminished," writes H. C. Wood, "including the albumin, fibrin, and the red corpuscles." If we inquire into the manner in which these morbid effects are produced—in the light of the views I have submitted concerning the physiological action of mercury—a ready answer imposes itself, viz., large doses increase so actively the immunizing constituents of the blood, that *the germs are not alone destroyed, but the red corpuscles and other blood-elements as well.* In other words, the proteolytic or digestive properties of the blood become so intense that blood-cells and tissues even are broken down, and a new source of "consumption" is added to the tuberculous process.

The manner in which the opponents of mercury were driven to this attitude becomes self-evident under these conditions: they used not *small and therefore beneficial* doses of mercury, but *large and destructive* doses of this agent. Dr. Barton L. Wright's rehabilitation of this method will suffer the same fate as that of his predecessors, if this important practical feature is not borne in mind.

On the whole, my investigations in this connection[8] suggest:—

1. That small doses of mercury are beneficial in the treatment of tuberculosis because they enhance to a marked degree the production of bacteriolytic and antitoxic substances in the blood, and thus insure the destruction of the tubercle bacilli and their endotoxins.

2. That full or large doses of mercury are harmful in this disease because they provoke an excessive formation of these substances and thus cause hæmolysis, and even cellular autolysis when sufficient quantities to induce mercurialization are administered.

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[8] Sajous: "Internal Secretions and the Principles of Medicine," Vol. II, pp. 1146 and 1609, 1907.

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Cyclopædia of Current Literature

APPENDICITIS, ETIOLOGY OF.

From clinical evidence and pathological and chemical observations it would appear that there is produced in the course of the changes in the intestinal wall an abnormal condition associated with formation of calcium soaps. These calcium soaps, when formed in the intestine in excess, produce intestinal sand, and associated with this there are symptoms of colic with, under some circumstances, an associated form of mucous colitis or, as the French authors call it, muco-membranous enterocolitis. This change taking place under similar conditions and probably from the same causes in the appendix, where there are poorer opportunities for the discharge of the deleterious bodies, is probably an important factor in the etiology of appendicitis.

The cause of these pathological changes is probably an excess of saturated fats in the food-stuffs, giving rise to the formation of calcium soaps of more saturated fatty acid in the mucosa and submucosa than is normally the case. These soaps are not so easily absorbed as the soaps of the unsaturated fatty acids, and therefore act as foreign bodies in the wall, at times in the lumen as a concretion. O. T. Williams (Liverpool Medico-Chirurgical Journal, July, 1908).

ARSENIC, ACTION OF, ON THE RED BLOOD-CORPUSCLES.

Various authors have come to the conclusion that, because arsenic seems to have no direct effect in increasing the production of red blood-corpuscles, its beneficial results must come from its specific action on the parasites causing the disease for which it is given. In a series of experiments in which he has mixed arsenic in a suspension of blood-corpuscles, the writer shows that arsenious acid is fixed to the red blood-corpuscles, and that this process takes place very rapidly, and, furthermore, that it protects these corpuscles against the hæmolytic action of distilled water. He believes that in some way the arsenic affects the stroma of the red cells in the hæmoglobin, but as this stroma is known to contain lecithin and cholesterin, he believes that these two substances should be given a thorough trial in every case of pernicious anæmia, especially as in the present knowledge of this disease no drug appears to have any permanent beneficial effect. J. A. Gunn (British Medical Journal, July 18, 1908).

ARTERIOSCLEROSIS, PREMONITORY SIGNS OF.

The initial manifestations of this affection vary according to the region in which its impact chances to fall, kidney, brain, heart, liver, etc. The tendency thereto is notably influenced by heredity, although acquired by certain habits of life. We may have early migraine, epistaxis, baldness, etc. Constitutional symptoms comprise diminished mentality, energy for work, and power of concentration. Tendency to fatigue is shown by drawn features and psychical depression. Small amounts of tobacco and alcohol render the patient morbidly irritative. Irritability of temper is common. Headaches are frequent. Sensory disturbances in one form or another are

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fairly common, such as neuralgia, tingling, numbness, slight paresis of the limbs with or without pain. Genuine insomnia is rare, though sleep is disturbed. Capiello has called attention to a peculiar sensation in the palm of the hand—a tingling along the palmar arch—when the radial artery is compressed sufficiently to arrest pulsation. A simple way of determining the existence of general arteriosclerosis is the estimation of the "stability" of the pulse. Under normal conditions the pulse-rate is eight or ten per minute higher in the erect than in the recumbent position, and when observation shows that such is not the case it may be inferred that the blood-pressure is markedly above normal, while if the ratio be reversed it may be taken as proved that not only is the arterial pressure unduly high, but that arteriosclerosis has reached the stage of giving rise to definite organic disease, an assumption which is confirmed should it be found that the heart apex is displaced to the left.

Exaggerated arterial tension with a small, hard, thready, but regular pulse, is a recognized sign of confirmed arteriosclerosis, but in minor degrees it also constitutes an early premonitory sign; indeed, some weighty authorities believe that actual changes in the arterial walls are preceded by prolonged exposure to the ill-effects of persistent high pressure, what Huchard calls the presclerous period, such hypertension being due to spasmodic contraction of the arterioles probably dependent on toxic irritation of the vasomotor system.

High arterial tension, it is true, is commonly associated with chronic renal lesions, but the presence of the latter by no means excludes the possibility of the mischief being due to arteriosclerosis; indeed, the renal lesion may be, and often is, due to local arteriosclerosis. When, in addition to an abnormally high blood-pressure, some of the other signs just mentioned are observed, there is a strong presumption in favor of the existence of arteriosclerosis. A. S. Gubb (Lancet, July 11, 1908).

BURNS, TREATMENT OF.

As a dressing for burns of every degree, the author recommends a powder consisting of one part of bismuth subnitrate and two parts of kaolin. The burned area is first thoroughly cleaned, then thickly powdered and bandaged with sterile gauze. The thorough drying of the area and the absence of infection are the chief virtues of the treatment, while the formation of bullæ is almost entirely prevented. The author's results have been most successful. L. Renner (Zentralblatt für Chirurgie, July 25, 1908).

CYSTITIS.

In the etiology of cystitis, the author regards trauma, congestion, and retention of urine as the predisposing causes and micro-organisms, of which the colon bacillus is first in order of frequency, as the direct cause. The gonococcus, strange to say, appears eighth on the list in Casper's classification, which the writer quotes. A few bacteria throw off ferments which decompose urea forming a carbonate of ammonium. The chemical reaction of the urine in cystitis is usually acid. Bacteria may gain entrance to the bladder in many ways, of which the urethra is the most common. The length of the male urethra protects the bladder from invasion to some degree, but the short female urethra offers little protection. Descending infections from the kidneys and ureters have of late

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been given an important place in the causation of cystitis.

In the treatment, the writer includes the free use of pure water, light and bland food, prohibition of alcoholic beverages, except in the weakened and aged, and the administration of hexamethylenamin. In acute cystitis the patient should be put to bed with hips elevated. Heat and anodynes are recommended, and infusion of buchu seems to possess curative properties. In chronic cystitis the cause must be removed, the bladder cleansed by irrigation, the reaction augmented, and the local blood-supply improved. Various antiseptic solutions for irrigation are given. In the female the short urethra allows topical applications to be made, *e.g.*, a 10-per-cent. solution of silver nitrate applied through the Kelly cystoscope. The author is not in sympathy with the cystotomies done for the relief of cystitis in women or in men. It is questionable whether they should ever be done, with the possible exception of cystitis caused by a malignant growth in the bladder. The procedure is opposed in every sense to the pathology present. R. E. Davison (New York Medical Journal, August 22, 1908).

DIARRHŒA, CHRONIC.

In a vast majority of cases, the writer believes that chronic diarrhœa is due to ulcerative lesions in the colon. Medicaments, though useful in acute diarrhœa, are ineffective in the form under consideration. The local treatment of colitis may be non-operative or surgical; the former includes diet control, rest, and colonic irrigation. Its success depends mainly on the thoroughness with which the bowel is cleansed. The irrigation treatment is usually effective in all varieties of colitis, but it naturally takes a longer time to overcome a tuberculous form than it does other types of ulcerated colitis. When non-operative measures fail after a few weeks' or months' trial, one of the following operations may be resorted to: Resection of the colon, colostomy, appendicostomy, cecostomy with irrigation of the small intestine (Gant's operation), and intestinal exclusion. Cecostomy and appendicostomy are preferred as being effective, not dangerous, capable of easy performance, and as leaving few if any undesirable sequelæ. He no more hesitates in advising these operations for the relief of chronic diarrhœa than in recommending appendicectomy for appendicitis. The writer describes in detail his own method, which he considers an effective way of irrigating both the small and larger intestine through the same opening in the cæcum. This procedure is also useful in conditions other than diarrhœa, namely, in the treatment of ordinary and pernicious anæmia, autointoxication, ptomain poisoning, diarrhœa of children, intestinal feeding following operations in the mouth, in stricture of the œsophagus, gastric ulcer, cancer, etc. S. G. Gant (New York Medical Journal, August 15, 1908).

DIPHTHERIA ANTITOXIN, TO ENHANCE THE EFFICIENCY OF.

The natural limitations of antitoxin treatment of diphtheria are discussed by the author. The results depend on the proportion between the amount of the toxins circulating in the blood and the amount of antibodies introduced in the curative serum and whether the antibodies can obtain access to the toxins. He expresses amazement that so little attention has been paid hitherto to the distention of the swollen tissue with its stoppage of the capillaries, preventing the circulating of blood and lymph

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through the region. This principle is recognized and applied everywhere else, the physician relieving conditions in infiltrates in which the circulation has been more or less arrested by one or more incisions. The circulation is generally at once re-established and necrosis and gangrene are warded off. This measure is particularly needed in diphtheria on account of its pronounced tendency to induce gangrene.

In the diphtheric local process the toxin in the blood and the antibodies in the injected serum are unable to come into contact, and consequently the serum fails of its effect, while the products of gangrenous process are absorbed and keep up the vicious circle. The writer makes a practice now of incising the diphtheric process in the throat when the fever does not subside after the injection of antitoxin and the diphtheric lesion in the throat remains hard and swollen. The incision generally bleeds very little; the more it bleeds the less obstruction in the capillaries. To promote the bleeding he applies warm compresses outside, and has the mouth rinsed with warm water to which a little mild antiseptic has been added. The procedure is but slightly painful, but the relief induced is frequently surprising, the temperature dropping at once, even although it has persisted high after one or two large injections.

Since the author has been systematically thus incising the hard swollen local process, he has had much better results with antitoxin treatment. The number of gangrenous cases has been reduced to the minimum. These experiences confirm anew the necessity for injecting the serum at the earliest possible moment, while the vascular passages in the region of the local process are still open and unobstructed. G. Kronig (Therapie der Gegenwart, July, 1908; Journal of the American Medical Association, August 8, 1908).

ENDOCARDITIS, CHRONIC, MANAGEMENT OF DURING STAGE OF COMPENSATION.

The writer emphasizes the necessity of individualizing all these cases, noting that every patient reacts differently to drugs, dosage, to different preparations of the same drug, and to different forms of mechanical stimulation. All compensation is, of course, relative. Alcohol should be dispensed with if possible, as also tobacco, tea, and coffee. Superfluous adipose tissue should be gotten rid of, but great care is called for as to diet, exercise, and drugs. Hygienic care is as necessary as in tuberculosis. All emunctories must be kept as nearly normal as possible. Rest in the recumbent position and sleep are all important. In cases with insomnia, hydrotherapy is of great value as a hypnotic and cardiovascular regulator. If drugs are used, sodium and ammonium bromide are less depressing than the potassium salt, while the trional-veronal group are of great service. As nearly all cardiac stimulants act as vasoconstrictors, it is well to combine with them the iodides and nitrites. Codeia is, without doubt, the safest of the opium preparations when a stimulant and sedative is to be combined.

The method of choice from among all three plans must be influenced by the age, physical condition, and social status of the patient. At both extremes of age, naturally, the severer forms of exercise are excluded. Before the age of puberty there is nearly always present a strong tendency to rapid hypertrophy, and frequently as rapid a degeneration of the hypertrophied muscle, making the prog-

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nosis bad in most of these cases, so that the physical activity and restlessness should be curbed rather than added to. At the other extreme, overexertion being less likely to occur, and activities being naturally lessened, once compensation is established, the natural hygiene of old age will be that of the accompanying endocarditis, which is, as a matter of experience, very well borne. S. A. Stein (New York Medical Journal, July 11, 1908).

OBESITY, EXCLUSIVE MILK DIET IN.

The writer has been delighted with his experience with this means of influencing obesity. It is the simplest and most convenient technic, as well as the cheapest, while it permits individualization and makes the least demands on the patient's attention. He has found it extremely effective, as he shows by eight typical examples. The patients lost from sixteen to forty-six pounds in from fifteen to eighty-one days on the exclusive milk diet, while it had a favorable influence on complications on the part of the heart and kidneys. The heart disturbances subsided and the pulse tension and rate declined. He allows from three to five pints of milk a day, in five portions: approximately a pint at breakfast time, a glass at 10 A.M., a pint at noon, another glass at 4 P.M., and a pint at 7 P.M. The milk is taken cold or warm, as desired, and up to a pint of water may be added. This technic obviates thirst and hunger, while the weight rapidly declines. Another advantage is the absence of salt from the diet. The only by-effect observed is a tendency to constipation, which must be combated; occasionally there is a little headache or backache with depression if the weight declines too rapidly. He gives the tabulated findings with the metabolism for three months in one case, remarking that the conditions on the milk diet are remarkably simple and instructive. F. Moritz (Münchener medizinische Wochenschrift, July 28, 1908; Journal of the American Medical Association, September 5, 1908).

OTORRHEA, CHRONIC, SOME COMPLICATIONS OF.

In the treatment of those cases of chronic otorrhea which are of long standing, an early examination should be made of the nose and naso-pharynx, and any pathological conditions—such as carious teeth, enlarged tonsils, adenoids, hypertrophied turbinates, a deflected nasal septum—should be dealt with on surgical principles, for while these conditions exist they will, by keeping up a catarrhal state of the nose and naso-pharynx, serve to accentuate and prolong the disease in the middle ear. The length of time during which conservative measures may be employed and the character of the treatment will depend upon the situation of the perforation. If it should be located in the upper half of the drum, disease of the ossicles will occur earlier than if it is in the lower half, and that itself will be a complication prolonging the disease and rendering it less amenable to conservative measures. If the perforation be situated in Shrapnell's membrane then ordinary methods of treatment, as by syringing the ear, will be futile, for the attic in these cases can only be reached by means of a special syringe whose nozzle has to be passed through the perforation. In these cases, too, surgical treatment may be advised much earlier than in other cases. An important point to bear in mind is that the longer the suppuration persists the greater will be the destruction of the contents of the middle ear.

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As the destruction progresses, so will the deafness increase, becoming, as time goes on, more and more difficult to improve, and also subjecting the patient to grave complications. H. H. B. Cunningham (British Medical Journal, July 18, 1908).

PARALYSIS OF THE LARYNX.

The writer discusses the diagnosis of unilateral recurrent nerve paralysis which, when complete, results in the fixation of one vocal cord in the cadaveric position. The cracked, raucous voice is suggestive rather than distinctive, but it is usually the one small symptom which first causes the patient to seek relief. The same is true of the partial stridor which may or may not usher in unilateral abductor paralysis in which, the dilator muscle alone being powerless, the vocal cord is retained in a position closing over one-half of the larynx.

In 40 cases of the "aneurismal group" the left recurrent nerve was paralyzed by an aneurism in eight and the right recurrent in six, including in both numbers those in whom the opposite cord was likewise but less affected. in the "pleuritis group" all the cases were of tuberculous origin. Means of confirming the diagnosis in this group are as yet sparse. The writer believes that the x-ray might be of use in excluding or demonstrating the presence of enlarged mediastinal glands which, in tuberculous individuals, constitute a possible cause of pressure on the recurrent nerves on the left side; but on the right side enlarged glands so situated could scarcely be beyond the reach of palpation. In the "tumor group," unlike the "aneurismal group," the vocal disability appeared only as a later and gradual development. Œsophagoscopy is useful in diagnosis of these forms of paralysis, although usually by the time a vocal paralysis supervenes in cancer of the œsophagus the diagnosis is plain.

The so-called lazy cord is a recognized symptom of carcinoma of the larynx, but the author believes that it is not generally known that total immobility of a cord may be the first visible evidence of this condition. The vocal paralyses due to lesions in the medulla and in the cerebral cortex are also discussed. W. E. Casselberry (Medical Record, August 22, 1908).

PULMONARY TUBERCULOSIS, RELATION OF PLEURISY TO.

A very large percentage of cases of apparently primary sero-fibrinous pleurisy may be demonstrated to be of tuberculous nature by laboratory methods, provided the investigator is sufficiently proficient with the method employed. The author finds that in various series of cases that have been followed for some years after the serofibrinous pleurisy, a large number show tuberculosis, the figures varying from 15 per cent. in Cabot's series to 82.6 per cent. in the series of Fiedler. While it must not be forgotten that pleurisy with effusion may accompany lobar pneumonia or may be caused by the pneumococcus without pulmonary involvement, and that it may also result from streptococci, staphylococci, and other micro-organisms, as well as from cancerous disease; and while it must also be remembered that serous fluid in the pleural cavity may be merely a transudate due to renal or cardiac disease, we must nevertheless be convinced that all these causes together are responsible for only a minority of the cases of so-called idiopathic serofibrinous pleurisy, the majority being cases of tuberculosis of the pleura, and to be treated

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accordingly. Those who have opportunity to gain special experience in tuberculous work so frequently see pulmonary tuberculosis developing within a year or two after an attack of serofibrinous pleurisy, recovery from which had apparently been good, that the conclusion may be accepted that the great majority of initial serofibrinous pleurisies are of a tuberculous nature. From this it follows that when called upon to treat a case of apparently primary pleurisy with serous effusion, it is the physician's duty to bring to bear upon it as many methods of determining its nature as possible, and that only when there is positive evidence of a cause other than the tubercle should the case be discharged.

In all serofibrinous pleurisies the absence of a demonstrable positive non-tuberculous case should be accepted as a presumptive evidence that the case is really one of tuberculous pleurisy, and the case should be watched and handled as a case of incipient tuberculosis for a period of not less than two years. Signs of pulmonary tuberculosis not infrequently are found first at the upper part of the lung opposite to the side on which the pleurisy occurred. For this reason the entire chest must be investigated. By following this course, while perchance control may be exercised in an occasional case where control is not needed, many a case will certainly be plucked from the grasp of the great destroyer, and many useful lives prolonged that would otherwise follow the downward course so common in untreated or tardily treated cases of tuberculosis. This is the more true because the type of tuberculosis following pleurisy with effusion is usually not very violent, and satisfactory results may therefore be expected from suitable prolonged supervision and treatment. H. S. Goodall (Medical Record, June 27, 1908).

RHEUMATOID DEFORMANS AND THYROID INSUFFICIENCY.

The authors describe a form of chronic, progressive, and deforming rheumatism which seems to be the effect of defective or perverted functioning of the thyroid. It is evidently a primary affection, most frequent in women, especially in those who have had numerous pregnancies or dysmenorrhœa. There is frequently a history of acute articular rheumatism. Vincent has lately pointed out the involvement of the thyroid during acute articular rheumatism, with tumefaction of one or both lobes and tenderness of the gland. He calls this the "thyroid sign," stating that it is the result of exaggerated functioning of the gland, and that it is observed, although to a less extent, in most infectious diseases. It is absent in the very mild and in the very severe cases. In acute articular rheumatism, when the thyroid sign is absent, the disease usually is extremely protracted. In this case thyroid treatment shortens the course of the disease. The thyroid sign is generally transient, but it may persist and increase and terminate in exophthalmic goiter. They have recently reported some cases of this sequence. A thyroid origin for deforming rheumatism is suggested by concomitant symptoms suggesting a tendency to myxœdema, such as desquamation, hypertrophy of the nails, scleroderma and psoriasis, œdematous infiltration of the tissues, somnolency, and headache, and exacerbation of these symptoms with the joint attacks. The most characteristic feature of the trouble is that it is benefited by thyroid treatment.

Deforming rheumatism is generally

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rebellious to medication, and the improvement under thyroid treatment confirms the theory of thyroid origin. They advise a trial of thyroid treatment in every case of this disease, suspending it at the least symptom of intolerance, examining the urine every two or three weeks, and noting the quantity every day and the blood-pressure and pulse every second day, and taking the weight every week.

Thyroid treatment is contraindicated in active tuberculosis and in heart disease. If the pulse reaches 100, the blood-pressure drops to 14, the amount of urine surpasses two liters, and the nitrogen proportion falls below 80 per cent., it is best to suspend the thyroid treatment for a few days. Iodin may also prove effectual. Among the cases reported is that of a woman of 28 given Roentgen treatment for excessive growth of hair on chin and neck. Under the influence of this treatment, chronic deforming rheumatism developed and signs of a tendency to myxœdema. Suspension of the treatment and administration of thyroid extract restored conditions to normal. Rheumatism from thyroid insufficiency has a slow and progressive evolution subject to remissions or even spontaneous retrogression. In one case all the symptoms vanished as exophthalmic goiter developed. Sergent and Ménard (Presse Médicale, July 15, 1908; Journal of the American Medical Association, August 22, 1908).

SUPRARENAL TRANSPLANTATION.

In a new series of 30 cases of suprarenal transplantation, they were made into the thyroids, testes, and kidneys of dogs and rabbits, not only in the same animal, but also from one animal to another of the same species. The results of implantations into the testes and thyroids were all negative. Positive results were obtained only in those cases in which the kidney was used as a receiving tissue. The experiments in each case consisted of three stages, the technic of which is described. Complete proof of functioning graft survival was obtained in two cases. In one of these the rabbit's suprarenal was transplanted into its own kidney, and thirty-six days later the remaining adrenal was removed. Seventy-seven days after the second operation the kidney containing the graft was removed. In three days the animal died. No evidence of peritonitis and no suprarenal accessories or stump could be found. The second case was that of transplantation of the suprarenal of one rabbit into the kidney of another. The rabbit's remaining suprarenal was removed thirty-six days after the introduction of the graft. The animal recovered. Twenty-nine days later the kidney containing the graft was removed and the animal died in forty-three hours. From the results of their work the authors conclude that the kidney seems to be the best structure for the reception of the grafts. Whether the graft alone, in any of these cases, would have been sufficient to carry on the suprarenal functions indefinitely, the authors cannot say. The longest period of graft survival which they have recorded is two hundred and forty-seven days. The authors think that with improved technic and more uniform success in animal experiments, it does not seem unreasonable to attempt suprarenal transplantation as a therapeutic measure in Addison's disease. F. C. Busch, T. M. Leonard and T. Wright (Journal of the American Medical Association, August 22, 1908).

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SYPHILIS, SERUM DIAGNOSIS OF.

The author concludes that the serum reaction for syphilis is specific. It is found positive in from 90 per cent. to 95 per cent. of all cases with syphilitic manifestations; in 50 to 60 per cent. of latent cases, and in from 70 to 80 per cent. of parasyphilitic diseases. The reaction is, in many cases, influenced by treatment of the patient, and it is not improbable that this number would be greatly increased if the reaction were pursued throughout prolonged treatment.

A positive reaction indicates activity of the specific virus, and is an indication for antisyphilitic treatment. While a positive reaction indicates syphilis, a negative reaction does not have an equal negative value. It is diagnostic of a systemic infection whether acquired or inherited, and not an organ diagnostic measure. The reaction will be found of enormous advantage in differential diagnosis in every department of medicine. W. J. Butler (Journal of the American Medical Association, September 5, 1908).

TAPEWORM, TREATMENT OF.

The indications in the treatment of tapeworm are described by the writer, and he says that they are all met by the following plan, originally described by the late Dr. Leslie Ogilvie, which he has found to answer in every case in which he has tried it: For three days previous to the administration of the male fern the patient should be kept entirely on a liquid diet; a pint and a half of milk and a like quantity of beef tea answer very well. To promote a free action of the bowels and to favor the removal of mucus, twenty grains (1.30 gram) of sodium bicarbonate, a dram of sodium sulphate, and twenty minims (1.12 gram) of spirit of chloroform in an ounce (30 grams) of peppermint water, should be taken three times a day. The night before the male fern is given the patient should have half an ounce (15 grams) of magnesium sulphate, with a dram of tincture of jalap, and twenty minims (1.12 gram) of compound tincture of chloroform in an ounce (30 grams) of water. This is repeated next morning at 7 o'clock if the previous dose has not operated. At 8 A.M. a dram (4 grams) of the liquid extract of male fern, made up in a mixture with a dram (4 grams) each of mucilage of tragacanth and syrup of ginger in an ounce of chloroform water. At 9 A.M. this dose should be repeated. At 11 A.M. half an ounce (15 grams) of castor oil with a dram (4 grams) of tincture of jalap should be given, and if the bowels do not act within an hour an enema of a pint and a half or two pints of soapy water should be administered. The motions should be carefully examined to find the head, and if the above treatment has been faithfully carried out it may be sought for with confidence. It is desirable to keep the patient in bed for two or three hours after the bowels have acted, as the male fern may cause faintness. F. de H. Hall (Clinical Journal, August 6, 1908).

THYROID GLAND, RELATION OF IODINE TO THE STRUCTURE OF THE.

The authors examined one hundred and thirteen dogs' thyroids in their study of the relation of iodine to the structure of the thyroid gland. In determining the iodine content of the gland they used the method originally employed by Rabourdin, with some modifications. Their classification of the glands was made strictly on the microscopic findings. They conclude that

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the percentage of iodine varies with the amount of colloid in the several degrees of hyperplasia; the colloid varies inversely with the degree of thyroid hyperplasia. The colloid gland (goiter) is the quiescent or normal state of a gland which has previously undergone hyperplasia, and obeys all the biologic laws of a normal gland. In the classification of thyroid changes (excluding infection and neoplasms) four major groups must be recognized, viz., normal glands, colloid glands, hyperplastic glands and complications ingrafted on any of the preceding groups.

The ability of the thyroid to store iodine depends on the degree of glandular hyperplasia, rather than on the form or mode of administration of iodine. The optimum therapeutic effects of iodine on the thyroid gland are only obtained with doses vastly smaller than those usually employed. The percentage of iodine which a thyroid may contain is variable, but the minimal percentage necessary for the maintenance of normal gland structure is quite constant. Commercially desiccated thyroid has a very inconstant iodine content, and therefore has a variable physiologic activity and therapeutic value. The writers consider that the problems of human goiter, both anatomically and chemically, should be investigated along lines similar to those adopted for the dog. D. Marine and W. W. Williams (Archives of Internal Medicine, May, 1908).

TONSILLECTOMY IN CHILDREN UNDER GENERAL ANÆSTHESIA.

Owing to the fact of operating in the channel of respiration, in close proximity to the important vessels, and in a field the nerves of which may, by reflex action through the pneumogastric, unfavorably affect the heart's action, the author considers a radical tonsillectomy under general anæsthesia as much of a major operation as appendectomy. He describes his method of operating in which he claims to secure, in addition to perfect anæsthesia, good illumination, a comparatively bloodless field, and a complete removal of the tonsils. Tonsillectomy is advocated since tonsillotomy is often no more than a decapitation of a protruding tonsil, the remaining base becoming a submerged tonsil frequently retaining portions of crypts which may still harbor infectious material. The patient is anæsthetized in the usual manner, but before starting the operation an apparatus is substituted by which the anæsthesia is continued through the nose. After the mouth gag is inserted the tonsil is drawn well forward to the median line, so that all cutting is done in plain sight and never at the bottom of the concavity. The gland is dissected out with a knife or scissors, preferably the latter, and the blood, during the operation, is removed by an aspirator. Ed. Pynchon (Journal of the American Medical Association, June 20, 1908).

TROPICAL LIVER ABSCESS.

The writer's experience leads him to believe that 90 per cent. of amœbic abscesses of the liver can be prevented by the use of large doses of ipecac. The drug must be given in freshly made pills or bolus, no food or drink being given for several hours before and after the dose, which is best given once a day in the evening. Vomiting must not be produced, particularly if abscess has already formed. To prevent it, tincture of opium or chloral hydrate may be given about twenty minutes before the ipecac, or the ipecac may be put in kera-

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tinized capsules, which do not dissolve before reaching the intestine (Rogers); or the pills may be coated with melted salol (Grubbs). The daily dose is from 30 to 60 grains of ipecac, continued for at least two weeks, but at increasing intervals. L. Rogers (Archives of Internal Medicine, June, 1908).

Book Reviews

PAIN: ITS CAUSATION AND DIAGNOSTIC SIGNIFICANCE IN INTERNAL DISEASE. By Dr. Rudolph Schmidt. Translated and edited by Karl M. Vogel, M.D., and Hans Ziusser, A.M., M.D. Cloth, $3.00 net. Philadelphia: J. B. Lippincott Company, 1908.

Whilst the study of the objective manifestations of disease is of the greatest value in arriving at a diagnosis, the importance of the subjective symptoms ought not to be disregarded, for not rarely the patient has complaints long antecedent to the appearance of alterations in function and structure, and these subjective symptoms may be the only basis for an early diagnosis and serve as useful guides in helpful treatment. Schmidt from his long experience as a post-graduate teacher believes that the position of pain in the symptom-complex is not properly understood. With these ideas in view, he here presents an analysis of the symptoms of pain as found associated with internal disease. He has not neglected to substantiate his deductions by close observation of ensuing pathologic changes. It is obvious that absolute rules cannot be formulated; therefore he only points the way to more careful analyses and deductions. He believes there is need for such a work to aid the general practitioner to interpret the symptom of pain in its relation to the objective findings.

B. C.

CONFESSIO MEDICI. By the writer of "The Young People." 158 Pages. Cloth, Price $1.25. New York: The Macmillan Company, 1908.

"Confessio Medici" is not a confession, but a group of delightful medical essays. "Not all confession is of sins; and a man may confess his faith, his ignorance, or his love." To confess is to appeal to our fellow-creatures, it may be to one, it may be to all, for sympathy and a fair hearing." The author, whoever he may be "only wants to confess what he has learned, so far as he has come, from his life, so far as it has gone."

In the chapter on *Vocation*, the author shows that while it has been said that the "doctor has a profession," "it is certain that some men are indeed called to be doctors," that is, that they are "designed and created for the service of Medicine," and, "if the doctor's life may not be a divine vocation, then no life is a vocation and nothing is divine."

To those of us who have lived in hospital, *Hospital Life* will appeal with subtle interest. There is a "spirit of the place, for great hospitals are more than blocks of buildings where patients are doctored and students and nurses are taught." "There we learn the spiritual essence of making use of sickness to show us things as they are." "Every hospital is a charity: but there is a difference between charity and hospitality. They who give money to hospitals are charitable; we who have the spending of it, are hospitable; and, of course, it is we who get the fun out of the money and we spend it well, entertaining in good style our innumerable guests."

An Essay for Students is a witty and philosophic discourse on many subjects. Here we are told that "Psychology insists that she is a science, yet Professor James tells her that she is not."

A Good Example tells, in a charming manner, of the life of Ambroise Paré, of his wonderful deeds, his pride in his work, his belief in himself, his purity and his love of home.

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Practice, The Discipline of Practice, and *The Spirit of Practice* are three rather fanciful essays on a variety of subjects connected with the conduct of the medical life, in various phases of personal, paternal, and practical relations. Of Christian Science, he says, "if we are to fight it we must make haste: for it will not long survive its founder. It will die before it gets to the poor. Not that it shows any great anxiety to get to the poor, so long as it can get at the rich. It is not strong: how could it be, with Fear for its father, and with such a mother?"

Wreaths and Crosses of Practice. We learn that Practice "never has any doubt which to send, for she does not wait till we are dead. The *wreaths* are the highest rewards which she gives to our leaders. The *cross* of Practice is failure in practice. Its weight, in each case, is determined by the rights and the wrongs of that particular case.

In *Retirement* we are told that retirement "can no more be undone than the rest of our deeds." "The act or event is the same for us all, but the attendant circumstances are particular to each of us." "For thirty years 'Velox' worked without a holiday, with his name a household word—then he fell ill. They fought it out between them: Death would not budge an inch for Velox, nor he for Death. Velox was permitted to survive but was compelled to retire and he stumbled away, he whose life's work had filled with sweetness so many lives."

The *Very End* likens life to a river and we are told that "by the time that they come to the sea, all great rivers are much alike," and that life at the end suffers a "seachange."

In *The Epilogue* we are told "it is the plain duty of us doctors, who are Life's paying guests, to be thankful for what we have received." The wise may learn that "if he has not fulfilled his ambition to be at the top of the tree, he can still congratulate himself that he is on a branch. The natural dignity of our work, its unembarrassed kindness, its insight into life, its hold on science—for these privileges, and for all that they bring with them, high over the top of the tree, the very heavens open, preaching thankfulness."

The delightful charm of these essays cannot be described. They must be read to be appreciated, and one must read them over and over again. The layman too will enjoy them, for they are not at all technical. The physician will find profit in them for with the philosophy and wit there is much of medical wisdom well worth having.

Those of us who have read the "Life of Sir James Paget" and remember the philosophical appreciation of that rich life, as shown in the last chapters, need not question far who the author of "Confessio Medici" is, for the style of the one betrays him.—B. C.

THE MOTHER'S YEAR-BOOK. Being a Practical Application of the Results of Scientific Child-Study to the Problems of the First Year of Childhood. By Marion Foster Washburne. 259 Pages. Cloth, $1.25. New York: The Macmillan Company, 1908.

This is the record of a close observation of the daily life of a child from its birth to the end of the first year. It is not a medical book, yet the interest manifested by the authoress is scientific and her conclusions and directions are eminently practical. Great stress is laid on the importance of breast-feeding and on the duty of the mother to nurse her child. All young mothers could read the book with profit, as it will aid them in studying the physical and mental development of the child and in understanding it.—B. C.

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MONTHLY CYCLOPÆDIA
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Medical Bulletin Section

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Address

INTRODUCTORY ADDRESS TO THE DEPARTMENTS OF MEDICINE, DENTISTRY PHARMACY, AND PHARMACEUTIC CHEMISTRY OF THE MEDICO-CHIRURGICAL COLLEGE, OF PHILADELPHIA.[1]

BY L. WEBSTER FOX, M.D., LL.D.,
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I BRING to the members of the freshman classes of the several departments of the college the heartiest felicitations of the Board of Trustees and the Faculties.

Chosen by your faculties to give expression to their feelings and sentiments, and also to offer words of counsel and encouragement which might enable you to feel more securely the new relationship which you bear to your new life and your chosen vocation, I stand before you in that unenviable position as orator of the day. There are two most important days that will come into the lives of each of you. One of these is when you make a choice of your life work; the other is when you choose a partner for life. By partner I mean one of the opposite sex with whom you will live for the rest of your life; one who will share your many successes and failures; that is, your wife.

I shall not presume to attempt to give you any advice concerning the second of these important events. As far as the selection of a partner for life is concerned, you should be better able to do this than I or any one else.

But as regards the choice of a profession, it is very different. The very fact of your being here at the opening exercises of the Departments of Medicine, Dentistry, Pharmacy, and Pharmaceutic Chemistry, may almost be taken as evidence in itself that you have chosen one of these professions as your life

[1] Delivered in the Amphitheatre of the Medico-Chirurgical College, September 28, 1908.

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work. Doubtless you have gone carefully into the requirements of each and have sat in sober and honest judgment on your ability to meet their many and severe requirements. I can only hope that none of you have made any mistakes as to the wisdom of your choice, or the correctness of your belief in your ability to win great success in some particular field of work.

I think, however, it will not be amiss if I say something to you about the great importance of making no mistake as to the choice of a profession. I think sometimes one is apt to make a mistake in failing to distinguish between what one wishes to be or to do, and what one is able to be or to do. It is by no means true that because one's father or one's particular friend has achieved unquestioned success in certain fields, that everyone can achieve success in this field, though he is willing to work hard for it. I have often heard people say that what one man has done *any* man can do; that it needs only pluck and application to win success in any path of life; that it is only necessary for one to determine what one wishes to be, and he may be assured success if he but gives earnest and continuous work in this direction.

Now, I have no hesitation whatever in telling you that I do not for a moment believe in any such comfortable doctrine. We are unlike that Admirable Crichton who, it was confidently asserted, could achieve success at anything. I was almost about to say that unfortunately we are not all Admirable Crichtons, but on second thought I will change the phraseology and say, *fortunately* we are not all Admirable Crichtons, for I honestly believe that a careful study of the lives of those who claim to have been successful *in a great number* of different fields will be found in reality to be mere shams who never reach far below the surface *of things,* and go from one profession to another, not by choice, but because they have so soon exhausted all their little abilities.

No; I am glad to say we are not Admirable Crichtons. On the contrary, assuming, as I am justified in doing, that you are lacking in none of the mental gifts common to mankind, that there is but one direction in which you can hope to achieve success, I firmly believe that the probabilities of success will be largely dependent on whether or not *you* have been able to choose the particular calling for which you are the most fitted.

Perhaps I should explain to you that when I say I believe there is but one kind of work for which even the best of us are the most fitted, I do not mean to assert that that particular work might not fall under a number of different closely allied heads, so that you might hope to achieve fair success in any one of these directions. But even then I believe in the long run that even of these different closely allied callings, there is one in which you might hope reasonably for the most pronounced success.

I need not remind you that it must, indeed, be a sad experience to make a mistake in the selection of a wife or partner for life; for, once wedded, you are indeed not only by the command of God, but by the proper feeling of manhood, to cling to her for better or for worse, in riches and in poverty, until death you do part. But worse than a millstone hung around one's neck is when one has chosen a profession for which he is manifestly unsuited and has actually reached a practice, or an attempt at practice, in that calling.

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Life is too short to make a choice of one's life work when the work is half done, to make a change for some other work, for, it is true in one's life work that the question one should put to himself is not "What *must* I do for a living, but *what shall* I be for a lifetime."

It is evident, therefore, that you cannot be too careful in sitting in the strictest judgment on yourself when you choose your professional career so as to avoid making a mistake, and this is something in which a man, when he has reached the age of those I see around me to-night, is far more competent to judge for himself than can any others. It is true that your friends can point out to you the requirements of the different professions far better than you can, but when the question comes as to your fitness for entering such professions, I think there can be no doubt that you should be the best judge.

I can, perhaps, give you a simple test by which you may be able to determine with reasonable correctness whether the profession which you have selected is one for which you are especially suited. At least I can tell you a test which I believe is generally reliable when one has been at his work for some time. Here is the test: If the work at which you are engaged is work for which you are suited, work in which you can confidently hope to achieve marked success, it will be work that is pleasant to you; work that you delight in performing. Show me the man who is constantly complaining about his work, thus proving that he is compelled to drive himself to its completion, like a galley slave to his task, and I will show you the man at work for which he is entirely unfitted; for we all like to do work that we can do well, and dislike it when we can only perform it in a happy-go-lucky manner.

But I must not forget that this great body of young men I see before me represents, perhaps largely, students who have determined to enter the Departments of Medicine, Dentistry, Pharmacy, and Pharmaceutic Chemistry, all of which require different abilities and a somewhat different course of study. Now, as I have already intimated to you, while it would be improper for me to give you any advice concerning the choice of your life partner, I may, I believe, properly tell you something about the life work of these different callings.

I would not presume, however, to attempt telling you anything about any other of these four kinds of life work than that in which I am personally engaged. I shall, therefore, limit my remarks to the requirements of the medical profession, leaving the requirements for Dentistry, Pharmacy, and Pharmaceutic Chemistry to those who have especially devoted their lives to these callings.

It requires but a moment's consideration to assure you that the physician occupies a position of the gravest responsibility. He is called, as it were, to the defense of the citadel of life. To a great extent the issues of life and death are left in his hands. On the manner in which he conducts or directs this defense, if not the actual life, at least the efficient life or the healthy condition of his patient, for his life, on earth will depend. Truly our life is but a vapor that is here for a moment, and then gone forever on this earth.

So important, indeed, is the work of the physician that no man is just

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fied in undertaking it who has not availed himself, as much as possible, of the immense amount of knowledge and experience that have been acquired as a result of the life work of the thousands of able practitioners who have gone before you. Remember, therefore, that unless you are willing to do all you can to take a position in the front ranks of your profession, you had far better give up the work at once, and try perchance if there is not some less important work for which you may be fitted.

But let us suppose that you have selected the medical profession and that, as far as you know, you have made no mistake in this choice; that it is a profession in which you can reasonably hope to achieve great success. Then I would say with Carlyle, "Know what thou canst work at and then work at it like Hercules," or, to put the same thought in simple yet strong English, pick out something for which you are fitted, then off with your coat and work at it like a man.

I take it for granted that there is no one here who has chosen for himself the medical profession who expects to be able to fit himself for the work without the expenditure of considerable work. If there be such a man present let me assure him that he has made a mistake; that it will be far better for him, now that there is time, to get into some other work. I can only say to him, what I am sure that any of the older students who may be here will agree with me, that the amount of work—hard, continuous, exacting work calls for the employment of all one's energies during all his waking hours and, indeed, in some cases, that it necessitates an addition to those hours from some of the time ordinarily set aside for sleeping.

I can recall the time when even the most reputable of our medical colleges had framed a curriculum that might be completed in two or three years at the most; a curriculum that did not require any previous preparations than what could be obtained in the ordinary country schools or, at the most, in an ordinary high school. Now, however, things have greatly changed. The curricula of our great medical colleges have constantly been extended until now they require a college preparation or, at least, the equivalent of a college preparation, and at least four years of hard and continuous study in the class rooms, laboratories, dissecting rooms, and elsewhere in the college. Moreover, constant study in ward classes at the bedside, as well as attendance at the surgical and medical clinics in the amphitheatres, is also required, and also a thorough knowledge of the materia medica and therapeutics.

It is for this reason that the length of time required for the complete course of studies for the medical profession has been constantly increasing, and you must not be surprised if, in the near future, you will read in our college announcement that a five years' course of study will be demanded of the students who follow you.

But there is another matter to which I wish to call your attention. While all the years of study of the medical profession are of great importance, there is probably no year that can begin to equal that of the *first year's course.* This is the time when what might be called the fundamentals of medicine are learned. Like all fundamentals, their thorough comprehension is absolutely necessary for

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the proper completion of the course. It is during this year's study that the A. B. C.'s or alphabet, as it were, of the medical sciences, are taught. If, through inadvertence, stupidity, or gross carelessness, some of these letters have been omitted, no matter how hard the work or how close the attention of the student may be in after years, say, in the remaining three years of his course, it will be impossible for him to keep pace with his class, for how can he hope intelligently to spell, say the word *advance,* if he happens to have failed to recognize the letters *A and E* with which it begins and ends.

And in this connection let me give you a little bit of advice. Times will come even to the most earnest student when, for the time being, he loses faith in himself. He sees other students of his class grasping, apparently with the the greatest ease, explanations or statements that, to him, are utterly unintelligible. He wonders whether, after all, the quality of his brains may not be so poor as to render it impossible for him ever to master the intricacies of the medical profession, and often this feeling of mistrust becomes so strong that he feels disposed to abandon the work and seek some other and less exacting profession.

If such a feeling ever comes to you in your studies, and I believe it is apt to come to every earnest student at times, let me earnestly advise you not to permit such doubts to worry you. While, between ourselves, you may be as you feel, far from being a mental wonder or prodigy, still you are hardly the dullard that perchance at first you fear, but are a sensible fellow who is not to be driven out of a magnificent profession like the medical profession, which he has chosen only after the most careful consideration. The chances are that instead of the trouble lying in a deficient brain, it is only a result that was to have been expected that arose from a failure somewhere in the *first year's work,* whereby the A. B. C.'s having been left *unabsorbed,* you have been unable to understand words containing letters of which you are ignorant. It is only necessary either *by your own work,* or by the help of your *professor,* to discover the elementary principles you have failed to master when, by conquering them, all future difficulties will disappear like a cloud does on the advance of a dry, warm wind, when a bright sun is shining overhead.

I suppose it is natural for one to place an undue importance on the profession he has chosen for his own life work. For my part I am unable to understand how any of the great professions of to-day can begin to rank in importance with that of Medicine or, at least, I doubt if any of them can claim greater importance than the profession of medicine. When one remembers the influence produced by one's health on the character of the work he is capable of performing, it is not difficult to see the important part played by the practicing physician in keeping the world's workers in the best physical health, for I need not tell you that the practice of medicine may now properly be regarded as a fixed science. It is no longer a matter of chance when diseased conditions of the body are treated—the old shot-gun prescription in which nearly all the medicine that an ordinary practitioner employed were thrown thoughtlessly into one and the same dose in the vain hope that some of them might possibly hit and cure the diseased condition of the body. No; every-

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thing is now thought out for itself. Physical diagnosis has reached such an advance that the human body is no longer a secret to the practitioner; but he can see, as it were, the conditions of its different organs and can intelligently prescribe for each the exact remedy it needs.

At a reception given Dr. Adolf Lorenz, the famous orthopædic surgeon of Vienna, by the Philadelphia Medical Club, several years ago, he told the following story upon himself:—

"Forty-two years ago," he said, "I was a little and very poor boy. One day wandering along the street, I found a single glove. I put it on. It was very much too large and contrasted harshly with my feet, which were bare. Proud and happy I walked to my home and showed my treasure to my mother. 'My dear boy,' she said, 'you will have to work very hard to find the other glove.' In the many hardships of life I often remember the significance of these words. But at the age of thirty, after many struggles, I had overcome all obstacles as a student, and rose to be first assistant to the late Professor Albert. I taught general surgery and the dream of my life was to become a famous surgeon, to rummage in the interiors of fellow mortals. But the dream never came true. I contracted a peculiar form of eczema of my hands and arms, from the use of the solution of the bichloride of mercury, which was used in sterilizing then. I could not follow my chosen work. I thought that the other glove was gone forever, and I could scarcely resist the temptation to commit suicide. In complaining of my lot to Professor Albert, he said to me: 'If you can't get along with wet surgery, try dry surgery.' So it was not by love, but by necessity that I became a dry surgeon. But necessity is the mother of invention, and after twenty years of hard work, I found at last the other glove, and it has brought me the esteem and appreciation of the profession, and the grateful thanks of many a mother."

The moral of this story is that you have many specialties in medicine from which to choose the other glove, and it also illustrates that to do so you must study with intense earnestness, master the fundamentals, and after you are advanced from one class to a higher one,[2] "but ever with your face toward the mountains, and be as happy as was Dr. Lorenz in finding your place in the world and the gratitude of your fellow-men."

"You must either soar or stoop,
Fall or triumph, stand or droop;
You must either serve or govern,
Must be slave or must be sovereign;
Must in fine, be block or wedge,
Must be anvil or be sledge."—*Goethe.*

[2] "Winning the Front Place," by Jno. Maclean, a book all young men should read.

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Clinical Lectures

EPITHELIOMA—HERPES ZOSTER OPHTHALMICUS.[1]

By JOHN V. SHOEMAKER, M.D., LL.D.
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EPITHELIOMA.

GENTLEMEN: This patient has a peculiar condition on his left cheek which is interesting, especially as regards the onset and the probable cause.

Mr. H. P., aged 57 years; nativity, Germany; occupation, night-watchman.

Family History.—His parents are both dead, the cause of their death is unknown to him. One sister and one brother are living and in good health. Three brothers and two sisters died in infancy. He possesses no knowledge of either his uncles, aunts, or grandparents.

Previous Personal History.—During his childhood life he had measles, scarlet fever, diphtheria, and mumps. Other than these diseases he has never had a severe illness.

Social History.—He is a widower; the wife died of nephritis.

Habits.—He uses alcoholic liquors and tobacco moderately, coffee and tea sparingly. He claims he has never been in the habit of dissipating in any way.

Present Illness.—About thirty-two years ago he was severely burned with a cigar on the surface of the cheek where now the present inflammatory process exists. Ten years later he accidentally bit the inner surface of the cheek, which was followed by a hard, indurated mass, and remained so until six months ago, when he was accidently hit on the scar produced by the hot cigar, with the iron bit on a bridle. The traumatism produced caused the scar and the mass on the inner surface of the cheek to become irritable; ulceration and degeneration resulted. So progressive was the ulceration that in three weeks' time the central portion of the lesion sloughed out, leaving an opening through and through the cheek a half-inch in diameter. The surrounding tissue involving almost the entire cheek is inflamed and infiltrated. The opening of the ulcer is irregular, is covered with exuberant granulations, and from it issues a thin, foul-smelling, sanious secretion.

The pain, which is sharp and shooting in character, is so severe that it interferes with his sleep unless he is given a large dose of opium.

Diagnosis.—This is, undoubtedly, an epithelioma involving the deep structures of the cheek. As a rule, this form of epithelioma begins with the formation of one or more large nodules in the subcutaneous connective tissue. The lesions vary in size from a small shot to that of a bean.

[1] Delivered in the Clinical Amphitheatre Medico-Chirurgical Hospital.

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Epithelioma is a malignant disease of middle and advanced life. It is more frequently met with in the face and in the genital regions, and among men between the fiftieth and sixtieth years.

Other parts of the body subject to the disease are the conjunctiva, pharynx, larynx, nipple, labia, vagina, uterus, scrotum, penis, anus, and rectum. The disease seldom manifests itself upon the hands, body, and scalp. In the advanced stages the diagnosis is easy, but at the onset the lesion may be mistaken for syphilis, lupus vulgaris, ordinary warts, simple condylomata, or seborrhœa sicca, and a careful differential diagnosis is necessary in the best interests of the patient.

The tables following will show the differential points in brief:—

Epithelioma.	*Syphilis (chancre).*
1. No history of infection.	1. History of exposure to infection.
2. Evolution slow.	2. Evolution rapid.
3. Lancinating pain.	3. No pain.

Epitheliomatous Ulcer.	*Tertiary Syphilitic Ulcer.*
1. History of heredity.	1. History of chancre.
2. Lesion single.	2. Lesion multiple.
3. No history of concomitant signs.	3. History of concomitant signs.
4. Evolution slow.	4. Evolution rapid.
5. Edges of ulcer hard and indurated.	5. Edges of ulcers not indurated.
6. Secretion of ulcer blood-streaked, viscid and scanty.	6. Secretion of ulcer fetid yellowish and abundant.
7. Sharp lancinating pain.	7. Pain absent.
8. Occurs late in life.	8. Occurs at any age.

Epithelioma (papillary).	*Condylomata.*
1. Lesion painful.	1. Lesion not painful.
2. Lesion single.	2. Lesion usually multiple.
3. No history of infection.	3. History of infection.
4. No concomitant signs.	4. Concomitant signs of syphilis.
5. Occurs in advanced life.	5. Usually occurs in youth or middle life.

Epithelioma.	*Lupus Vulgaris.*
1. Occurs late in life.	1. Occurs usually in childhood or early adult life.
2. Lesion single.	2. Lesion multiple.
3. Lesion surrounded by zone of infiltration.	3. Lesion surrounded by characteristic papules and nodules.
4. Ulcer deep.	4. Ulcer superficial.
5. Secretion blood-streaked and viscid.	5. Secretion abundant, yellow and puriform.
6. Course more rapid.	6. Course very slow.
7. Sharp lancinating pain.	7. Pain absent.

In the early stages of epithelioma of the face, there is a congestive, scaly condition resembling seborrhœa sicca. However, seborrhœa sicca is widespread, and other portions of the body are involved at the same time. While epithelioma is limited in area, single, and accompanied sooner or later by characteristic waxy nodules, the so-called "chancroid corpuscles."

Pathology.—Microscopically there appears to be an inward growth and continuous multiplication of epithelial cells of the rete mucosum. The inward growth and continuous multiplication of epithelial cells form what is known as an unusual length of the interpapillary processes which project down into the corium like the fingers of a glove. Later the blood-vessels become dilated,

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the layers of the skin infiltrated with serum, and the lymph spaces crowded with wandering cells and lymphoid corpuscles.

The projecting finger-like processes of the rete mucosum increase in size and divide into branches, which unite with each other to form a framework of epithelial tissue. The cells of which they are composed become pressed together and form compact masses of various shapes and sizes. In papillary epithelioma there appears to be a combination of papillary hypertrophy and epithelial proliferation. Finally, in all cases the gradually increasing pressure of the epithelial cells interferes with the circulation. The small papillæ and their arteries become obliterated, and the larger vessels are lessened in calibre. Degeneration and ulceration soon appear, and mark the beginning of the second stage of the disease. The patient's health is not much affected while the ulceration remains superficial, but when it extends to the deeper tissues the neighboring lymphatics soon become affected, and through them the entire system becomes profoundly involved. The composition of the blood is altered, and degenerative changes, with the production of toxic products, occur in various tissues. The alkalinity of the blood is decreased, and the destruction of albumin is increased irrespective of the nature and amount of food consumed. Muscular tissue and parenchymatous organs undergo fatty degeneration.

Etiology.—The cause of this man's epithelioma, I believe, dates back to the time when he bit his cheek and to the burn of the cigar, and the trauma received accidently a few months ago. Of course, the diathesis was lurking in his system, and manifested itself at the most favorable site, invited there by the irritation and traumatism. It is also true that the age of the patient played an important part. In some cases, however, the disease seems to be due to long-continued pressure or other mechanical irritation, such as a broken tooth, contact with paraffin, the irritation of soot in the folds of the scrotum producing chimney-sweepers' cancer.

Cases of cancer often occur in which no source of irritation or of traumatism can be discovered. Old scars, pre-existing warts, nevi, and sebaceous cysts frequently undergo degeneration without any apparent cause, and become the seat of epithelioma. A predisposition of cancer seems to exist in some families, and nearly 60 per cent. of the cases give a family history of cancer. The more recent theory is that all cancers are of a parasitic origin. Many cases have been met with and reported, which excited the suspicion that the disease was transmitted from one individual to another.

Treatment.—The epithelioma on this patient's cheek is not amenable to medicinal treatment. He has been treated for three months with the x-rays by another physician without success. In fact, so much of the cheek is involved that it is necessary to remove almost the entire cheek. Indeed such an extensive operation would not remove all of the cancerous cells. The submaxillary glands are markedly involved, and metastasis evidently has been going on for some time past.

Removal of the greater portion of the cancer, followed by judicious application of the x-rays may be productive of much good in prolonging the patient's life and make him more comfortable.

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Medicinally, bitter tonics are indicated to improve his appetite and thus tone up his depraved system. I suggest the following combination be given him after the operation, which should be performed as soon as possible:—

℞ Tincturæ nucis vomicæ .....f℥ss.
Tincturæ cinchonæ compositæ .....f℥j.
Tincturæ gentianæ compositæ .....q. s. ad f℥iij.
Misce. Signa. One teaspoonful before each meal.

Prognosis.—This patient will never be cured of his disease. The cancer will gradually sap away his vitality, and he will die of exhaustion. As a matter of fact, I don't believe his life can be prolonged longer than six months.

HERPES ZOSTER OPHTHALMICUS.

GENTLEMEN: The patient before you presents typical lesions over the left side of his forehead and face of a disease that is rarely found over this portion of the body.

He is 23 years of age; nativity, United States; occupation, clerk; single. He states that three days ago he had severe pain over the forehead and in the left eye, but at that time there were no external signs of inflammation. However, on the following morning small inflammatory papules appeared on the forehead which, in the course of ten hours, were covered with vesicles, situated on the apex of each papule.

Prior to the attack of what he considered a neuralgia, he felt perfectly well. One week before he had the attack of neuralgic pains over his forehead and face, he had his eyes refracted, and atropine solution was instilled into the eyes to dilate the pupils. He states that the effect of the atropine was slow to disappear, and that since its instillation a sensitive condition of his eyes and a feeling of fullness in his nose and forehead existed. He claims that he has not been exposed to draughts, nor has he taken drugs or alcoholic liquors.

Diagnosis.—From the history of the onset such as unilateral neuralgic pains, without any known cause, in the area involved, and followed by inflammatory papules having a vesicle on the apex of each papule; also, that the papules appeared in groups, and that the vesicles have no tendency to rupture, are all sufficient symptoms that the disease is herpes zoster ophthalmicus. The lesions are so typical in this patient that it could not be mistaken for any other disease, but at the very onset when the papules appear with the small vesicles on the apices, the disease may be confounded with eczema, and in its later stages with vesicular eczema. Hence I will give you, in a brief way, the differential points:—

Herpes Zoster.	*Vesicular Eczema.*
1. History of premonitory neuralgic pains preceding the eruption.	1. History of itching and burning sensation at the onset of the eruption.
2. The eruption is unilateral along the cutaneous nerves and in separate groups.	2. The eruption is bilateral and symmetrical and not definitely arranged.
3. The vesicles are situated on an inflammatory base, are large, and show no tendency to rupture.	3. The vesicles are situated on a slight erythematous base, are small, and rupture spontaneously.
4. Vesicles dry up.	4. Vesicles rupture, weep and form crusts.
5. Pain increased on pressure.	5. Pain is not increased on pressure.

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We call this a case of herpes zoster ophthalmicus, because it involves the ophthalmic region. Should it involve another portion of the body it would be called according to the anatomical region or nerve tract invaded, such as herpes zoster frontalis, herpes zoster auricularis, herpes zoster faciei, herpes zoster occipito-collaris, herpes zoster cervico-subclavicularis, herpes zoster cervico-brachialis, herpes zoster lumbo-femoralis, herpes zoster sacro-ischiodicus, herpes zoster sacro-genitalis, etc. The chest and abdomen are the most common portions of the body affected.

Pathology.—A microscopic examination of the skin affected shows that the vesicles develop in the rete mucosum; the papillæ of the skin are enlarged, and the blood-vessels dilated. There is also new cell proliferation extending even into the corium and subcutaneous tissue. The nerves at the site of the eruption are inflamed with cell infiltration of the neurilemma; the ganglia of the sensitive nerves involved, especially the spinal ganglia, are inflamed and may be the seat of cell infiltration. In fatal cases the ganglia have been found in an entirely altered and softened condition.

Etiology.—The only cause assignable to the disease in this case is the instillation of the atropine solution. I know of no other instance in which herpes was caused by this drug. However, it can be possible because arsenic and other minerals have caused herpes in some form. We know so little about the peculiar idiosyncrasy of the different individuals. The chief causes are exposure to cold draughts, atmospheric changes, injury to the nerves from direct blows or pressure. Herpes may also occur in consequence of certain diseases, as malaria, influenza, pneumonia, typhoid fever, Pott's disease, and the inhalation of carbonic oxide. Among the predisposing causes are nerve fatigue and exhaustion, local irritants, and a delicate susceptible skin.

Treatment.—Ascertain the cause, if possible, and remove it to arrest further progress of the disease. The bowels should be well cleansed out and diaphoretics given to stimulate the skin to its normal functionation. For the relief of pain opiates, bromides, or chloral may be necessary.

The following combination in the form of a lotion will often be sufficient to stop the pain, assist in drying up the vesicles, and cut short the progress of the disease:—

℞ Tincturæ opii ..... f℥j.
Alcoholis absoluti ..... f℥iss.
Aquæ q. s. ad ..... f℥viij.

Misce. Signa. Saturate two layers of gauze and apply locally to the affected parts. The gauze should be kept moist and evaporation allowed to produce a cooling as well as an anodyne effect.

Tonics, as in this patient, as a rule, are indicated. We will prescribe for him an iron tonic containing:—

℞ Strychninæ sulphatis ..... gr. ss.
Ferri pyrophosphatis solubilis ..... gr. xl.
Arseni trioxidi ..... gr. ⅛.
Quininæ bisulphatis ..... gr. xx.
Aloini ..... gr. iss.
Extracti gentianæ ..... gr. xl.

Misce. Fiant capsulæ no. xx.
Signa. One capsule after each meal and at bedtime.

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Prognosis.—The prognosis of this case is good, but cases of this form of herpes have been reported as fatal. As a rule, in such cases the Gasserian ganglion is involved.

Original Articles

MEDICAL BOOKS TEN YEARS OLD VALUELESS?

By EPHRAIM CUTTER, M.D.,

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I. This has evidently been laid down as a law, apparently in the interest of publishers, as silversmiths change the patterns of plate—for business. If so, then the squatty parchment bound volumes of my father's library, published 1729 in Germany, of "Inaugural Latin Medical Theses" must be cast out. But it so happens that one of them contains a thesis on "Fibrinous Concretions of the Heart," showing their cause far better than modern works and showing a knowledge superior to that of the present day conventionalism that tolerates "heart failure" as a cause of death—a term equally applicable to bullet work through the heart—also coming close to fibræmia of the American, Salisbury, who years ago demonstrated fibrin filaments in the blood as a pre-stage. I have confirmed these observations, remarking their easy treatment by food.

The recent thrombosis of Bishop Potter, of New York, in our opinion might have been detected in the pre-stage in the blood and had a chance of removal by proper diet and watching of the blood morphologies and thus of saving a most valuable life. This idea published in 1888.

II. *Open Air Treatment of Tuberculosis.* I have a book published by the famous Dr. Benjamin Rush, in 1794, that shows how far advanced Philadelphia was in modern(?) ideas that put so many people out of doors, and even then in Wilmington, Del., Mr. Abner Cloud, an ancestor of one of my present patients, was curing himself of consumption out of doors. Burn up Dr. Benjamin Rush's book, cheer for the modern open air treatment and let Dr. Benjamin Rush go into oblivion? I guess not. Moreover, Dr. Rush's style is so clear, well expressed and courteous it ought not to be killed out: and it is not. Besides his own cases cured, Dr. Rush quotes Dr. Sydenham, of England, as reporting a case of tuberculosis (and by horseback riding), tallying with Dr. Benjamin Franklin's case of a past rider, thirty years cured.

What good of reporting in 1907 that 50 per cent. of cases of tuberculosis are cured by the open air treatment when it is claimed that medical ideas a decade old are valueless? For, if the 1907 idea is entertained, that of 1794 and previous must be allowed; and also the value of ideas 114 years old should not be called worth more than paper mill raw material! But such is human nature!

In 1543, an authority states that a steamboat paddled the waters of

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Spain; next year there is to be a celebration of Fulton's invention of a steamboat, some 365 years *after* the Spanish invention! Was the fault still with the steamboat? The thousands of steamships now plying the waters of the globe answer, no! It was the people. So if it has taken 114 years and more to develop the open air treatment the fault must be in the profession and not in the idea. So with food. In 1854 the writer caught blue fish at Provincetown —splendid specimens; they were thrown away as unfit for food! Not so now. Surely it is not the blue fish that were at fault? Whose was it?

There is another American treatment of tuberculosis published in 1880; 26 cases out of 170 cured: many since standing more than ten years cured. Is it the fault of the treatment that it is not adopted?

Open Air Tuberculosis Treatment, 1872. My next visit to the Adirondacks[1] was in 1872, suffering severely from nervous prostration. My youngest sister, Annie, accompanied me as we sojourned in the Keene Valley, and by and by made our way to Lake Placid, to Saranac village and Paul Smith's on St. Regis. It was then the chief hostelry of the mountains. In the two months there, the rich food nearly killed instead of curing me. In the Wilmington Gap we met W. H. H. Murray, who urged us strongly to go into camp with him. A pity we did not, for it was the season in which many of those notable feats of his adventures occurred, the electrifying account of which in subsequent articles in a Boston paper and *The Atlantic,* gained him such great fame, and filled the mountains a year or two after with "Murray's Fools," so-called, because for years after only too many of the hordes of consumptives and other invalids who went there for health died because their vitality was too far gone. But, as a man said to me the other day, Murray's advice about coming to them, and how they should sleep under the open sky and breathe all the forest air they could, as God manufactured it among the pines and hemlocks and cedars, was the very method which patients here are now following on advice from their physicians; while others are learning to sleep in the open, or with windows wide open, in whatever region they may live.

III. Dr. Benjamin Rush[2] on "Tropical Arsenic in the Cure of Cancers." Dr. Hugh Martin, a Revolutionary army surgeon, came to Philadelphia and advertised to cure cancer with a botanic discovery in the neighborhood of the Pittsburg garrison. We quote, "As Dr. Martin had once been my pupil I took the liberty of waiting upon him and asking him some questions as to his discovery. His answers were calculated to make me believe his medicine was vegetable and that it was originally an Indian remedy. . . . Anxious to see the success of this medicine in cancerous sores, I prevailed on the doctor to admit me to see him apply it in two (2) or three (3) cases. . . . It gave me great pleasure to witness the efficacy *of the doctor's applications.* (Italics ours). In several cancerous ulcers the cures he performed

[1] "In the Adirondacks," by Denis Wortman, D.D., L.H.D., The Chrisian Intelligencer, September 23, 1908.

[2] Read before the American Philosophical Society, Feb. 3, 1786.—Showing his ethics.

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were complete. . . . The doctor continued upon all occasions to assure me that it was wholly a vegetable preparation."

In 1784 the doctor died and it was generally believed that his medicine had died with him. But Dr. Rush procured samples from his estate, and, testing, found it to be arsenic mixed with a vegetable powder, deadly nightshade (solanum lethale). Thus Dr. Martin was proved to be a quack (one who deceives as to his remedies and refuses to divulge them). Dr. Rush says that arsenic was an old remedy for cancer used by Guy and Plunkets. Dr. Rush did declare for Martin's cures of cancer sores on the nose or cheeks or upon the surface or extremities of the body. "To pronounce a disease incurable is often to render it so." . . . "I flatter myself that I shall be excused for giving this detail of a *quack* medicine when the Society[3] reflect that it was from the inventions and temerity of quacks that physicians have derived the most active and most useful medicines and processes." For example, ovariotomy from a French swine-herd; vaccination Jenner got from dairy folk, etc.

Query. Would not Dr. Rush's ethics as to a cancer medical quack be good now to apply to those medical men who treat cancer and give their treatment? Would not a respectable regular physician to-day, who goes out among cancer quacks as Dr. Rush did, at once lose his professional standing? Yes, he would But Dr. Rush did not. His name stands justly very high among physicians of the ages and is one of the medical glories of that center of medical learning, Philadelphia.

These ethics of Dr. Rush practiced by the distinguished cancer commissions—(1) New York State Cancer Laboratory; (2) Clara Croft Commission, Boston; (3) Imperial Research Cancer Commission, England; (4) Imperial Research Cancer Commission, of Germany, would give a different showing to the reports of to-day. So far as the writer can learn they are those of despair. They will not apparently believe even the dicta of No. 1: that cancer is a curable malady and that one hundred and one (101) mice and fourteen (14) human cases of cancer recovered *spontaneously*. Nor did No. 1 use the Rush ethics, but has ignored one who suggested that they might be cured by means that helped Natura Naturans to cure, *i. e.*, by diet as Dr. Rush himself suggested. Be this as it may, as to our medical publishers, would it not be far better for suffering humanity, had they kept publishing the 1786 ethics, for then public opinion might have made the said Cancer Commissioners adopt them? The cases are bad enough, but they are worse not to have the genial, gentlemanly, courteous and generous modes of investigation practiced in Philadelphia towards the close of the eighteenth century by Dr. Benjamin Rush.

IV. *Clinical Thermometry.* When Sir Humphrey Davy discovered the nitrous oxide gas, about 1800, A.D., it was thought it would cure everything and Sir Davy properly tested it in Guy's Hospital, London, among other cases, on a hemiplegic man. As the gas was used in a nascent condition it was made

[3]American Philosophical Society, Feb. 3, 1786.

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in the hospital wards by the bedsides. The man watched with great interest the paraphernalia and preparations. When the gas was made, Sir Davy said, "Get his temperature." It was done. When the thermometer was taken from his mouth he evidently thought that thermometry was the administration of the gas, for he said, "I feel very much better." Sir Humphrey tipped a wink to his assistant and said, "All right, we will come at ten to-morrow and make another application." The apparatus was removed, and at 10 A.M. the next day the same phenomena of preparation and thermometry were used. The man said, "I feel still better for the gas." Sir Davy repeated his tactics and came with chemical impedimenta the third day, repeating the performance. At its close the man moved his paralyzed arm and leg! Draw your own inferences. But this illustration shows that clinical thermometry was used a hundred (100) years ago in Guy's Hospital. Indeed if we can trust the evidence it was used and discarded long before. It is very nice that so much good has been found in it that it is conventional and popular, all contrary to the idea that medical ideas ten years old are of no value. In 1855 I had a clinical thermometer made, but I must confess I was so stupid I thought it was a waste of time to use it as clinical morphologies were more abundantly satisfactory. Remove causes, and fevers depart—in my humble experience and judgment.

V. "The Synthesis of Cataracts by Sugar," published by the *American Journal of Medical Science*, Philadelphia, 1857, by Professor S. Wier Mitchell, LL.D., Hon. Fellow of the Royal Society, London; repeated by Sir B. W. Richardson, LL.D., of London; also repeated by the writer. All this more than ten years ago and thus by the ten-year rule all of no value. Is it? Answer, No. Facts are eternal. This fact is eternal.

One proof, 1908, September 11, West Falmouth, Mass., 2.50 P.M., a frog was partly immersed in strong syrup in a glass jar. At about 4 P.M. it was dead. Cataracts in eyes.

Moreover, in my experience I have known cures of partial cataracts by stopping off the conventional use of sugar. To me the professional indifference to this fact, shows the weakness of human nature, as in the following instances: (*a*) First, to repeat: Steamboat navigation was in Spain in 1543, A.D., at Barcelona[4], "but the Chancellor of the Exchequer, a poor red tapist opposed the whole thing which as usual fell to the ground"; and yet, some 365 years later, Robert Fulton will be extolled as the first steamboat man! What a long wait ere the world got its rights! That steamboats were facts.

(*b*) Fifty years ago at Souris, Prince Edward's Island, I was at a fishing station. I noticed there were many fish in the water about the landing wharf. One day when the wind was so tempestuous that the mackerelers could not go out, I got the carpenter to cut a fishing pole off of a 12-foot board, despite the protests of the many fishermen that the fish were poisonous. I remember that, when I tried to fish, the wind would blow the baited line out straight from the horizontal pole over the water. But when a lull came and the bait

4 "Gatherings from Spain" by Richard Ford. E. P. Dutton & Co., New York, 1906.

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went under water immediately bites would follow and I soon got a firkin full of black bass, 2 to 3 pounders. Again the fishermen protested they were poisonous if eaten. But I ate and they looked at me as the Melita barbarians did at St. Paul after the viper bit him—to fall down dead! And these were fishermen, whose business it is to know about fish! Disappointed in my death they changed their minds and I was told from that time these wharf fish were their food.

(*c*) In London a learned man read a paper before a Scientific Society and was awarded a prize, "On the impossibility of a steamship crossing the ocean from England to America!" But the first ocean steamship reached America before the prize was awarded! It seems very strange that while frogs and syrups are almost everywhere to be had, this synthesis of cataract is not better known after fifty years, and that its lessons are not enforced for the good of eyesight. Surely the ten-year rule is best kept by not observing it here.

W. Falmouth, Mass., Oct. 2, 1908.

(To be continued.)

AMERICAN PROCTOLOGIC SOCIETY ABSTRACTS

REPORTED BY LEWIS H. ADLER, M.D.,
PHILADELPHIA.

(Continued from the September issue.)

"SOME COLONIC, SIGMOIDAL, AND RECTAL CONDITIONS," by Dr. Edwin A. Hamilton, Columbus, Ohio, who stated that the ascending and a portion of transverse colon have to do with absorption of the fluids of the digestive tube. The descending colon and sigmoid are concerned with storing fecal debris. There are changes in the intestinal wall of the descending colon, sigmoid, and rectum which are due to the function of these parts. On account of the stagnation, fermentation and putrefaction in the contained mass, toxins, and bacteria, under conditions favorable to this process, pass through the mucosa into the wall of the bowel. The result of this permeation of the wall of the intestine is an irritation which brings on a round-cell infiltration of its layers. This infiltration diminishes the elasticity of the viscus, and by its slow but inevitable contraction diminishes its lumen. This same process of round-cell infiltration may attack the mesenteris of these various divisions of the bowel and cause thickening and contraction of them. The main symptoms of this condition is prolonged and intractable constipation with all its morbid sequelæ.

After fibrosis has occurred the affected area may be palpated, if the abdominal walls are relaxed. It is needless to remark that all accessible viscera must be investigated, and every other cause of the constipated state must be eliminated. Treatment comes under the hygienic, in which diet and colonic lavage occupy a very prominent position.

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Surgery must be invoked in the advanced cases when the fibrosis is marked. Any part or all of the colon except the part concerned in the absorption of fluids may be removed. Metchnikoff is a prominent advocate of the idea that the colon is the territory from which most of the poisons which destroy the body originate, and that if man possessed no storehouse in which digestion debris may stagnate and putrefy, he would be a much more physically perfect animal. So that we may not hesitate to remove any portion of the large bowel, no matter how extensive that portion may be, when it has already lost what little functional value it originally possessed.

"RECTAL DISEASES," A REPORT OF THREE CASES: "CONDYLOMA, LIPOMA, AND FOREIGN BODY," was the title of a paper read by Dr. Lewis H. Adler, Jr., who stated, in reference to condyloma, that two varieties were recognized, one being of syphilitic origin, called condyloma latum, and the other condyloma acuminatum, due to irritating discharges of a non-specific source, such as gonorrhœa, leucorrhœa, and chancroid. The latter form was the variety concerned in the case reported, the patient evidently acquiring the trouble in the practice of sodomy.

The essential peculiarity of the case under consideration, being that the numerous cauliflower growths encircling the anus (some being large and others small), was the fact that not only had the growths involved the cutaneous surface, but also that they existed within the bowel upon the mucous membrane. The latter, it is true, were quite minute, and might have been overlooked by a superficial examination. All of the excrescences, even the smallest, were pedunculated.

The treatment consisted in the removal of the larger growths by scissors and cauterizing their bases with a paquelin cautery. The smaller growths were destroyed simply by the application of the cautery point. To prevent pain due to the cauterization, the parts were sprinkled liberally with bicarbonate of soda, as recommended by Dr. Jas. P. Tuttle.

The patient made an uneventful recovery.

CASE II.—The case of lipoma was not exceptional, except for the fact of its occurrence in the ischio-rectal fossa and that it could be pressed backward and forward through a ring of firm tissue, which ring could be distinctly felt surrounding the tumor and through which it glided back and forth very much as a hernia acts.

The growth was removed under ether anæsthesia, and was found to extend well up in the ischio-rectal fossa on the right side. The redundant skin was excised, and the wound brought together with silk-worm gut sutures.

The recovery was uneventful.

CASE III.—A very remarkable instance of a foreign body in the rectum was that of a woman aged 42, who had consulted Dr. J. J. McLaughlin, of Philadelphia, and then through the doctor, the writer of the paper.

She had reason, about six years previous, to seeing Dr. McLaughlin, to think she was pregnant, having most of the symptoms pertaining thereto—suppression of menses, enlarged abdomen, morning nausea, etc. For about six months she did not menstruate. At no time did she experience fœtal move-

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ments. About six months from the cessation of menstruation, the flow returned and she again became regular in this respect. The physician she was then seeing, informed her that he thought she had had a false conception. Two years later she went south and contracted a diarrhœa which kept her under the care of physicians almost constantly, but without experiencing any permanent relief. Six months prior to seeing the author of the paper she had experienced considerable tenesmus within the rectum, the pain being confined to no one point, but was experienced low down in the pelvis and about the rectum. Sometimes a dozen paroxysms would occur in a day. The diarrhœa still continued, many movements occurring in the twenty-four hours.

At no time was there any bleeding from the bowel, and she was not affected with any protrusion, such as piles, etc. About two months before she saw the author of the paper, she passed from the rectum what she termed "a bunch of bones," and a month later a piece of skull.

Upon consulting Dr. McLaughlin, the patient was carefully examined by him and a diagnosis made, which was subsequently confirmed by the author.

At the time of the examination the patient showed marked evidence of being poorly nourished, weighing but about 75 pounds, her usual weight prior to this trouble being over a hundred. Digital exploration of the rectum revealed a mass situated about four inches up the bowel anteriorly, which felt very much like the united halves of an open clam shell, the pieces being sharp and exposed. Extreme care had to be used to avoid cutting or injury to the examining finger. The tissues in which the mass was embedded were greatly hypertrophied. A few small pieces of bone were removed at this time, but it was soon evident that the larger mass could not be extracted except under general anæsthesia.

The patient, therefore, was admitted into the Polyclinic Hospital, and under ether the sphincter was dilated and the mass of bones removed, which proved to be in large part, frontal bones. It was only by the exercise of the utmost care and skillful manipulation of the fingers that some of the larger pieces were removed without injury to the patient or surgeon.

The after-treatment consisted in cleaning the parts thoroughly, several times a day, with a 2-per-cent. creoline solution.

The patient made an uneventful recovery, and in six months gained about 25 pounds, and since the operation has had no diarrhœa.

The cause of the condition was uncertain. Two causes naturally presented themselves: a dermoid cyst or the product of an extrauterine fœtation. As the essential symptoms of the dermoid cyst were not present, and in view of the previous history, the opinion was expressed by the writer that her condition was probably due to the latter cause.

"Six Cases of Profound Secondary Anæmia due to Bleeding Internal Hæmorrhoids; and one Case of Necrosis of the Rectum as a Result of Self-Treatment," were reported by Dr. Dwight H. Murray, of Syracuse, New York, who held that the profession was not entirely blameless for the serious results which occurred in this class of cases, because it is looked upon by the laity as a matter of no serious moment, and in many cases the

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physician does not insist upon a thorough examination and prompt treatment.

The first case reported was one of bleeding hæmorrhoids, secondary anæmia, delirium, amnesic aphasia, and other critical symptoms. A good recovery was the result of the operation.

The second case was one of hæmorrhoids and a villous polypus resulting in profound anæmia, heart weakness, and a general appearance resembling that of malignant disease. This case made a full recovery following operation.

The third, fourth, and fifth cases resulted in profound anæmia, weakness, melancholia, and invalidism, all making a good recovery after an operation.

The sixth case had been long neglected and died as a result of the profound anæmia two days after he was first seen by the author, and before the patient consented to an operation. The examination showed: Hæmoglobin, 10 per cent., and red blood-corpuscles, 1,000,000.

The author held that in cases of bleeding internal hæmorrhoids, patients may lose more in ten minutes than can be recovered in as many days, and that surgeons were not justified in delaying an operation; also, that it would be far better for the physician in charge to withdraw from the case, if such a patient refuses to follow his advice, when he believes that an operation is necessary.

The author believed that the primary cause in many cases of secondary anæmia can be found, if sought, in the last three feet of the intestinal canal.

The case of necrosis of the rectum was caused by the injection of two-thirds of a teaspoonful of headlight oil, upon retiring every night, over a period of several weeks. The treatment was recommended to him by a fellow-employee. The case made a good recovery, and at this time, five years after the operation, no stricture of the rectum has resulted.

Editorial

SPEED AND THE RACIAL DECLINE.

THE Philadelphia *Ledger,* a few days ago, stated that an ingenious Frenchman estimated that there were 17,000 different methods of getting "off the earth," but now, in the twentieth century, it has increased to 52,500. The important question now arises, what is the cause of this great mortality?

We are living in an age of tumultuous mental activity. Science and art have advanced with great strides, both in variety and extent, as well as in rapidity of development; their attainments have been prodigious. Old things are passing away, a host of ancient prejudices are tottering to their fall, and such is the rapidity with which we are moving that scarcely have they been leveled with the dust when new creeds spring from the ruins.

This mortality or shrinkage of the population seems clearly referable to the nerve-racking life of the day; to the struggle not for the mere existence, but

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for the luxurious existence; to the ever-increasing desire for luxuries of life and the moribund craving for social dissipation and advancement.

In this age the standard of rapidity in business transaction is more appreciated than correctness of detail. The young man who expects to succeed in business must be a hustler, have a snap-shot style of conversation, patronize rapid transit vehicles, understand shorthand, and eat quick lunches. It has also been estimated that many people die as a result of swallowing pieces of unmasticated food, buttons, pins, false teeth, etc. No wonder many people suffer from indigestion and their life is finally terminated by death. If we watch them eat we notice that the coffee or tea goes down in two mouthfuls, and little piles of cakes are cut in quarters and disappear in four mouthfuls, mastication being considered a lost art or a foolish waste of time and energy. It seems as if the people are forced to hurry through their days.

Many accidents arise due to the anxiety of the populace to get there quick. As shown by statistics, we hear of many people being killed or crippled as a result of the break-neck speed of the locomotives, electric cars, automobiles, etc. Our great railroads, mines, furnaces, and rolling mills with their revolving wheels, shafts, hammers, and anvils, while they bring with them so many of the blessings and comforts of life, also annually smother out the life and burn, crush, mangle, and tear the limbs of thousands of our inhabitants.

Competition is exceedingly keen, and to it can be attributed the multiple methods whereby speed is devised, and in consequence thereof life is terminated prematurely.

If you are not sufficiently energetic and fleet in reaching the hill you fall by reason of the fact that it has been accomplished by some one before you. In order to reach his destination quicker, man is always inventing quicker methods of transportation. This is very clearly illustrated by the fact that the horse took the place of the ox, the automobile and locomotive that of the horse, and now the time is rapidly approaching when the airship will be so perfected that it will be possible to cross the continent in a very short time and move with such surprising rapidity that all civilized countries of the globe will be brought in close contact. The airships will be so constructed that they will travel through the air at a tremendous rate, and will be able to swoop down to their destination just like a bird.

It is thus easily seen that all these factors tend to endanger the life and limb of our fellow-men. About two centuries ago man enjoyed his stay upon this earth much longer, but now, considering the fact that he lives a shorter life in number of years, he nevertheless accomplishes and sees more.

In view of the fact of the brief time that is allotted to us now, we are more acute in our observations, greater in our accomplishments, and loftier in our ideas than those of the primitive age, regardless of their longer term of life.

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Materia Medica and Therapeutics

ACIDUM SULPHURICUM DILUTUM IN THE TREATMENT OF CARBUNCLES, BOILS, ETC.

Drs. R. J. and J. Reynolds, of London, employ internally large doses of dilute sulphuric acid in staphylococcic infection of the skin and subcutaneous tissues, as in carbuncles and boils. To be effective, large doses of 20 to 30 minims, well diluted with water, should be taken regularly every four hours. If a case of carbuncle be treated in this way, it will be noticed that after the first twelve or eighteen hours the affected area becomes distinctly circumscribed, and the lesion ceases to extend, softening of the tissues in the affected area rapidly takes place, and pus is discharged, healthy granulations commence to form at the base and the process of repair goes on uninterruptedly. It is quite unnecessary to *cut* or to interfere with the part in any way, except perhaps to apply some antiseptic dressing, such as carbolized vaseline (1 in 40) on lint. For many years now they have treated all such cases by this method, and it has never once failed them. It seems a very simple way of dealing with this affection, and they claim that it does not disturb the patient's digestion or cause any inconvenience in any way. The treatment should be continued for at least a fortnight after the lesion has disappeared. It is obvious that quinine, strychnine, and other tonics can be given in combination with this remedy when occasion demands it, but, whenever possible, they have given the dilute sulphuric acid alone, simply diluted with plenty of water, in order that they might have no doubt as to which drug they could attribute the result. It may be observed that the cases in which this treatment has proved so efficacious have been uncomplicated by other diseases such as diabetes, etc. (British Medical, August 15, 1908.)

ACONITE AND BELLADONNA: THEIR ANTAGONISTIC ACTION.

Dr. H. Speirs records a very instructive case which illustrates the antagonistic action between aconite and belladonna.

The patient was a man, aged 48, who swallowed by mistake half an ounce of aconite, belladonna, and chloroform liniment. After a short time he began to display his symptoms. The physiological action of the belladonna was most clearly observed. His pupils became so dilated that only the wide rim of the iris was visible. He was restless and acted like a maniac, followed by fits of unrestrained mirth. The patient had to be supported as he was unable to stand, owing to muscular weakness due to the action of the aconite. The pulse was rapid, small, and thready. However, the patient recovered in spite of the enormous overdose of both these drugs.

The depressing action of the aconite was annulled by the stimulating action of the belladonna.

The conclusion drawn from this case is that hypodermic injections of atropine should be administered in all cases of aconite poisoning. (British Medical Journal, August 15, 1908.)

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AMBLYOPIA IN CHILDREN.

Dr. Stephenson states that an attack of meningitis (or encephalitis) may entail, as permanent evidence of its former existence, (1) incomplete optic atrophy, (2) nystagmus, and (3) paresis of one or more of the extrinsic muscles of the eyeball. He reports that optic papillitis is regarded as a sequel to infantile meningitis or encephalitis, as indicated by the patient's history. The sight of the patient was partially or totally lost, but afterward it has been more or less regained. (British Medical, July 18, 1908.)

ANAPHYLAXIS.

D. H. Bergey, Philadelphia, has experimented to ascertain whether there might be danger of producing undue hypersensitization in the employment of bacterial vaccines when, for some reason, the interval between the first and second dose was sufficient for the sensibility to develop. He used injections of some of the common saprophytic organisms, *B. cereus, B. megatherium, B. subtilis* and *B. mesentericus,* into the peritoneal cavity of guinea-pigs, and followed this by a second injection after an interval of fourteen days or more. Contrary to his expectations, at least some of the cultures employed were found capable of producing fatal effects, especially *B. cereus,* and hence it is impossible, he says, to be certain as to the outcome of his experiments. It appeared, however, that, as a rule, the death occurred far more rapidly in the sensitized animal than in the normal control, and that pathological reaction was more marked. None of the explanations offered of the hypersensitization of animals to various proteid materials seem satisfactory to Bergey. His own experiments have been too few and too indefinite in results to permit any positive statements, but he thinks that the definite period of incubation required indicates that some form of antibody is developed as a result of the first injection which takes part in the production of the symptoms and lesions after the second one. It seems evident, he says, that either a poisonous compound is liberated from the proteid of the second injection through the influence of the newly formed antibody or else there is formed such poisonous substance through the union of the newly formed antibody and a portion of the proteid material of the second injection. It is probable, he suggests, that the poison has a direct action on the central nervous system and on the sympathetic, as indicated by the effects on the respiratory center in the brain and the pathologic effects in the focal hæmorrhages into the internal organs. Several attempts were made to prevent the effects of the second injection, by etherizing the animal before its administration, or by the employment of small doses at short intervals instead of one large dose for the second injection, but without very encouraging success. No attempt was made to inhibit the effects of the second injection by the use of serum of an animal rendered immune to the particular organism employed. It was found possible to neutralize the effects of a second dose of horse serum through the use of a serum of an animal immune to horse serum. Bergey cannot say whether or not this would follow with cultures. The results of the study showed that there might be some danger in the use of second injections of bacterial vaccines when the interval between the first and second is long enough to develop anaphylaxis. It is clear, however, that such risk would be slight, as the dosage of bacterial vaccines employed ordinarily is

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too small to be very dangerous. (Journal of the American Medical Asso., September 5, 1908.)

ARYLARSONATES IN THE TREATMENT OF SYPHILIS.

Dr. Lambkin records the results of his experiments in the treatment of syphilis by arylarsonates. The results obtained were marvelous. He states that this drug acts as a prophylactic when given early and in sufficient quantities, and also prevents the further progress of the disease. All lesions such as mucous patches, ulceration, and syphilitic chancres disappeared under the treatment, and the drug had a most beneficial effect in any existing secondary or other active symptoms.

This drug is administered by injecting six grains every third day until ninety grains are given. After the patient is put under treatment, he soon gains in weight, his general condition is greatly improved, induration and all other symptoms disappear. This was the result obtained in the cases which he records.

Chemically this drug is sodium aminophenylarsonate, having the following formula: $C_6H_4.NH_2.AsO(OH)(ONa)$ $5H_2O$. Its commercial name is "soamin," and it contains 22.8 per cent. of arsenic. No cases were recorded which showed signs of toxicity. (British Medical Journal, August 15, 1908.)

ERYSIPELAS: THREE DIAGNOSTIC SIGNS.

Dr. Milian depends upon the following three signs: 1. The sign of maximum involvement at the periphery (du maximum centrifuge). 2. The sign of the ear. 3. The sign of pain upon pressure.

The sign of maximum involvement at the periphery. Erysipelas spreads centrifugally or at least from point to point, so that fresh areas are continually becoming involved, while those originally infected are recovering. It is for this reason that the areas of greatest swelling and redness are located at a distance from the site of infection and at the periphery of the whole region involved. This sign is especially useful when it is necessary to differentiate between erysipelas and an ordinary inflammation, such as a suppurating dacryocystitis, a dental abscess, or parotiditis. These affections may superficially resemble erysipelas, but in them the pain, redness, and swelling are at the center of the area involved, not at its periphery. This sign sometimes fails at the very beginning of an erysipelas when only the site of infection is involved. Twenty-four hours later, however, it is usually well in evidence. A possible source of error in interpreting this sign is involved in the behavior of the eyelids. These structures, as is well known, become extremely œdematous throughout their extent as soon as involved, and remain so even when the zone of acute inflammation has passed beyond them. In making use of the sign discussed above, the condition of the eyelids must, therefore, not be taken into account.

The sign of the ear. The skin covering the external ear is so closely adherent to the cartilage that subcutaneous tissue may here almost be said to be wanting. It is for this reason that all ordinary inflammatory processes, since they involve chiefly the subcutaneous tissue, are arrested in their spread when they reach the ear. Erysipelas, however, being a dermatitis, spreads readily over the external ear and may by this means be distinguished from dental abscess and the like.

The sign of pain upon pressure. Tenderness to pressure is probably the most

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constant feature of erysipelas, and this tenderness is most marked at the periphery of the area involved. Acute eczema, zona, parotiditis, are not nearly so tender; dacryocystitis, dental abscess, and the like have their point of maximum tenderness at the center, not at the periphery of the reddened and swollen area. (Progress Médicale, No. 30, 1908).

FORMALDEHYDE DERIVATIVES.

T. Sollmann, Cleveland, Ohio, reports an experimental study of a number of proprietary antiseptic preparations, in which he endeavored to reproduce, so far as possible, the conditions under which the drugs are actually employed. Their value as an antiseptic is, in most cases, asserted to be due to the liberation in the organism of the active antiseptic radicles. This decomposition was tested in simple solutions as well as with pancreatic ferments, imitating the conditions under which it would occur in the organism, and also as evidenced by urinary analysis. For estimating the usefulness of intestinal antiseptics, the retardation of pancreatic putrefaction was utilized, and for the value as wound antiseptics the effect on the putrefaction of the blood. The methods employed and the results are given in detail, and the results compared with those of other investigators of these products. The general conclusions reached are stated substantially as follows: 1. The methylene radicle is transformed very readily into formaldehyde with some compounds; much more difficulty or not at all with others. 2. The formaldehyde thus liberated is completely oxidized in the human organism and does not exert any antiseptic action on the urine. 3. Formidin is neither decomposed nor absorbed to any appreciable extent in the intestine. 4. Hexamethylenamin is the only reliable urinary antiseptic (by mouth) of the various substances tried. The salicylates (sodium salicylate, salol, novaspirin) have a distinct but much inferior action. The following are practically useless; boric acid, citarin, formidin, iodomuth, sodiformasal, sodium benzoate and sodium phenolsulphate, tannoform, tannopin and ur-a-sol. 5. As intestinal antiseptics, the most efficient appear to be bismuth subnitrate and creosote (also novaspirin and ur-a-sol). These are closely approached by tannoform and iodomuth. Distinctly inferior are formidin, salol, guaiacol, carbonate, tannopin, and glutol. Guaialin seems nearly useless. 6. As relatively insoluble wound antiseptics, the most efficient appear to be betanaphthol, boric acid, iodoform, quinine sulphate, and xeroform. These are closely approached by acetanilid, bismuth subnitrate, and orphol. Somewhat inferior are chloretone, formidin, iodomuth, and ur-a-sol. Distinctly inferior are glutol, guaiacol carbonate, tannoform, tannopin, tannin, and salol. Not antiseptic are cerium oxalate, charcoal, chalk, and zinc oxid. 7. Of all the products examined for antiseptic value, hexamethylenamin is the only one offering undoubted advantages over the older antiseptics. This statement is not intended to reflect on the antirheumatic value of the salicylic products, or on the astringent value of the tannin products. (Journal of the American Medical Association, September 5, 1908.)

GELATIN AND SALT SOLUTION INFUSIONS IN TYPHOID HÆMORRHAGE.

Dr. Witthauer reports four typhoid cases, with severe hæmorrhage from the bowel, treated with subcutaneous injections of sterile gelatin (Muench. med.

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Woch., May 5, 1908). Three out of the four recovered, and in the fourth the hæmorrhage stopped three days before death. The preparation used was that of Merck, 50 Gm. per dose, either daily or every other day till the bleeding stopped and remained absent. In conjunction with this the author used salt solution infusions during the height of the bleeding. He had previously used gelatin by mouth and rectum without success, but he believes the subcutaneous use of gelatin in typhoid to be of much value, and he hopes that further observations on the subject will be instituted. (Boston Medical and Surgical Journal, July 23, 1908.)

HYDRASTINE.

Pure hydrastine has been in use in its isolated form for a short time only as compared with strychnine, and its therapeutic applications are not as thoroughly worked out. As a general tonic, its effects are comparable to those of strychnine, and its relations to alcohol are somewhat similar. It has even been employed as a cure for alcohol addiction with some degree of success. It ranks high in the treatment of intermittent fever and chronic malarial disease, though much inferior to quinine. As an astringent it is useful in reducing redundant secretions. It is much used as an injection in gonorrhœa and gleet, also in vaginitis and leucorrhœa. Given in mild solutions, it is useful as a tonic and stimulant to the conjunctiva, in catarrhal conjunctivitis and the catarrhal stage of more serious lesions. It is useful in nearly all forms of catarrh, and this appears to be true, whether it is applied locally or taken internally—a statement which can hardly be made of any other remedy.

This drug is used most commonly in the form of hydrastine hydrochloride, of which the dose usually given is ½ to 1 grain, every two hours, if necessary; externally, for use in conjunctivitis, 1/10 to ⅕ per cent. solutions; in gonorrhœa, ¼ to ½ per cent. solutions. (Medical Summary, August, 1908.)

LACTIC ACID BACILLI CULTURES IN NOSE, THROAT, AND EAR WORK.

Dr. H. Holbrook Curtis, of New York, has experimented as to the treatment of the diseases of the upper respiratory passages with cultures of the lactic acid bacillus as topical applications, with marked success. The secretions were examined bacteriologically before and after the treatment. It was found that the pyogenic bacteria had been destroyed in many cases. The preparation was used as a spray in the nasal passages and by injections into the various sinuses by means of catheters. It is of especial benefit in atrophic rhinitis, liquefying the crusts and causing the nose to present a much-improved aspect. There is no application that approaches it in efficacy in the treatment of muco-purulent secretions. The author describes the method of application and gives seven illustrative cases. (Medical Record, July 11, 1908.)

NITROGLYCERIN.

This quickly-acting agent is officially known as spiritus glycerylis nitratis (1 per cent.). Blair advises physicians accustomed to the tablets to be careful with the active spirit. Old tablets may be inert unless coated, for this drug is very volatile. Blair says: "I dilute the spirit with nine parts of glycerin and have it ready for instant use hypodermically or by the mouth, and if this solution happens to be spilled it does not volatilize or the alcohol evaporate

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and an explosive residue remain." The dose of nitroglycerin must be gradually increased, for tolerance to it is soon gained. In one or two minim doses of the U. S. P. spirit it is an antispasmodic, vaso-dilating heart stimulant of special service in angina pectoris, acute cerebral anæmia, asthma, and fainting conditions. In smaller doses it is of some value in albuminuria and a few cardiac affections. Owing to the blood-pressure so suddenly exerted by this agent, we believe large doses administered to the aged whose arteries are rigid and brittle, are always attended by a certain degree of danger. (Medical Summary, August, 1908.)

OATMEAL IN DIABETES MELLITUS.

Dr. Pari found that oatmeal in spite of its richness of hydrocarbons, is very advantageous in the treatment of diabetes mellitus. The treatment consists in giving the patient oatmeal for a few days and this is followed by another diet, because the oatmeal would become monotonous and it would be impossible for the patient to live on it. This alternate diet should consist of flesh, ham, greens, butter, and cheese. The first effect of the oatmeal diet is an increase in the glycosuria, followed by a decrease. In the case recorded of a young man, aged 22, who was treated by the oatmeal diet, there was a decrease in the acetone and the sugar and oxybutyric acid soon disappeared. There was an increase in the body-weight. These results led the author to believe that the starch of the oatmeal has a specific action on diabetes. (Gazz. degli Osped., May 31, 1908.)

OPIUM HABIT IN THE PHILIPPINES: ITS TREATMENT.

Dr. E. S. McKee writes that in the treatment of the patients at the San Lazaro Hospital, at Manila, it has been found that those who smoke opium give it up comparatively easily. Those who take it by the mouth relinquish its use with rather more difficulty, while those who are addicted to its use hypodermically suffer the most from being deprived and require a long time to effect a cure. The cure of the opium smoker usually occupies less than a month, while the opium eater requires a much longer period, and at least sixty days for the hypodermic user. Two hundred and thirty-three patients have come under treatment, and 186 have been discharged as cured. The opium law, which was passed by the United States Congress, went into effect March 1, 1908. During the year previous there had been a gradual increase of taxes on opium from month to month till the sale of opium not for medicinal purposes was prohibited. It was hoped that by this means the opium habitués would themselves be compelled to reduce the amounts which they used. The government also made arrangements to treat any one free of charge and pay their transportation to and from the hospital who desired to be relieved of the habit. So far as possible to learn, no great hardship has been caused by the withdrawal of the drug. True, quantities of the drug may have been brought into the islands before the law went into effect, and there are possibilities of smuggling. (The Lancet-Clinic.)

OPSONIC INDEX IN PULMONARY TUBERCULOSIS.

The reports of the results and researches of the various degrees of pulmonary tuberculosis at the Crossley Sanatorium, were made by Drs. Smith, Radcliffe, Elder, and Crossley. They adopted the technic of Wright and Douglas, and

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in their charts it is shown that there is an appreciable variation in the opsonic power from hour to hour, although the patients were resting. Finally they concluded that more than one estimation of the index is to be made whether an injection of tuberculin should be given or not. According to their suitability for inoculation, they classify the different types of patients: *(a)* Those showing extreme and rapid oscillations in opsonic power. In such cases tuberculin treatment would be unfavorable, because the autoinoculations were so marked even at rest. *(b)* Those with persistently high level indices. *(c)* Those with low indices. In these cases the injections yielded excellent results. The authors also carried out researches which showed that the agglutinins and opsonins in cases of phthisis follow a similar course. The opsonic estimations were more delicate and recorded slighter variations. (The Lancet, London, July 18, 1908.)

PEPSIN: ITS SECRETION IN INFANTS.

Dr. J. Rosenstern has investigated the digestive power of the gastric secretion of infants in health and in diseased condition, and determined in the course of these experiments how far the presence of pepsin plays a part in the process (Berl. klin. Woch., March 16, 1908.) He details the technique of applying trial breakfasts to infants, and then gives the detail of his actual observations. He found that the quantity of pepsin in the gastric secretion of healthy artificially-fed infants increases as the infant grows older up to the end of three months, when it reaches a level at which it remains constant. Healthy breast-fed infants produce less pepsin than artificially-fed infants. The quantity of pepsin secreted into the stomach does not vary according to the state of nutrition of the infant, but is more or less constant for the age of the infant. However, when the food taken in decomposes in the gastric cavity, the quantity of pepsin is smaller than under normal conditions. The author is therefore forced to contradict the statement, which is often made, that the diminution of ferment in the stomachs of infants leads to definite symptoms or plays an etiological rôle in the affections of digestion in infants. (British Medical, August 8, 1908.)

PICRIC ACID IN BURNS OF THE EYE.

Burns of the eyelids and conjunctiva, especially by lime, are of frequent occurrence, and any practitioner may be called upon to treat them. It has long been known that a saturated solution of picric acid is one of the best applications to a skin burn, relieving the pain in a marvellous manner and acting as a powerful antiseptic. A. Fortunati, of Rome (Annali di Ottalmologia, vol. xxxvi, 1907, fasc. 12, 9 to 11, p. 746 to 770, with plates), after making experiments with rabbits' eyes and after long clinical experience, warmly recommends picric acid for treating burns of the conjunctiva and cornea, especially by chemical agents, including lime. He finds that a 2-per-cent. ointment—picric acid, 20 centigrams to white vaseline (neutral reaction) 10 grams—is better than a watery solution. He applies it twice or thrice in the day after the instillation of a few drops of cocaine. The results are surprising, especially in the direction of relieving pain. Symblepharon is infrequent after the picric acid treatment. (British Medical, August 28, 1908.)

PICRIC ACID SOLUTION IN BURNS.

Dr. Vinnedge says that a solution of this agent as a local application in sur-

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face burns, has been satisfactory. It appears on the shelves of the pharmaceutist as an amber-colored salt, soluble in alcohol and lightly so in water. If one hundred and forty-four grains be dissolved in three ounces of alcohol and diluted with two ounces of water, it is ready for use from the office shelf of the physician; it may be further diluted with sterile water—according to the requirements of the individual case. The drug is especially useful in burns made by hot asphalt from the streets. It is a convenient and efficient remedy. (The Central States Medical Monitor, August, 1908.)

POTASSIUM IODIDE IN ACUTE RHEUMATISM.

Dr. Muscariello (Rif. Med., January 20, 1908), after an experience of some 30 cases, speaks enthusiastically of Sogliano's method of treating acute rheumatism by intensive dosage with iodide of potassium. On the first day he gives 6 grams in 300 grams of water, divided into three doses; on the second day, 5 grams; the third day, 4 grams; and the fourth and fifth day, up to the tenth day, 3 and 2 grams respectively. Under this method the fever and the pain are said to disappear in three days on an average. No troublesome iodism was observed, and even where cardiac disease existed no danger was seen in the large doses. On the other hand, the cardiac condition improved. In cases where syphilis was present the results were not so good, and the author suggests this is because much of the effect of the drug is taken up in neutralizing the syphilitic poison. Under this treatment there is no need to restrain the appetite of the patient, even in spite of considerable pyrexia; moreover, the iodide is said to improve the appetite. Usually, excellent results are obtained within three days, and the treatment is only continued for another seven days to consolidate the cure and guarantee against relapses. There seems no difficulty in eliminating the iodine, and in the author's experience no bad renal effects have been seen —nothing more than a slight trace of albumin, never any casts. Probably the drug acts in virtue of its antiseptic and antitoxic properties; but, be this as it may, the author has no doubts as to the great value of this mode of administering iodide of potassium in the treatment of acute rheumatism. (British Medical, September 12, 1908.)

SERUM DIAGNOSIS OF SYPHILIS.

Udo J. Wile, Berlin, Germany, gives substantially the following conclusions, deduced from investigation of a hundred cases in which both serum and urine were tested for the presence of complement-binding substances in syphilis, to compare the relative value of each in the diagnosis and, if possible, show the influence of treatment received on the presence or absence of the reaction. Seventy-six of the 100 individuals were or had been syphilitic, 24 were control or normal cases. 1. The urine in a large percentage of syphilitics contained substances behaving in the same way as the antibodies in the serum of the same patients. 2. These substances seem to appear a little later in the urine than in the serum and at times are present in one and not in the other. 3. The diagnostic value of the reaction in the urine must, for the present, be viewed with caution, since in 2 per cent. of his cases a positive reaction occurred in the urine, while the serum was negative. 4. In both serum and urine these substances tend to disappear under vigorous specific

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treatment. (Journal of the American Medical Association, October 3, 1908.)

SODIUM PERBORATE.

W. A. Puckner and H. A. Clark report an examination of this chemical compound, the advantages of which over hydrogen peroxide have been widely advertised of late years. Their examination is reported in detail and they conclude that, while sodium perborate may possess some real advantages over hydrogen dioxide in that solutions can be prepared extemporaneously and may be had either of an acid or an alkaline reaction, it is to be regretted that it is put on the market with exaggerated claims. Their analyses show that no less than hydrogen dioxide, it is of uncertain strength, and that, at least as sold by the Roessler & Hasslacher Chemical Company, it is an unstable product, and that, as found on the market, it does not contain from 9 to 10 per cent. of available oxygen, but barely two-thirds of that amount. (Journal of the American Medical Association, September 5, 1908.)

SONDERN'S DIFFERENTIAL RESISTANCE LINE.

Dr. L. B. Wilson, of Rochester, Minn., after modifying Gibson's standard chart for recording observations as to the leucocyte count and the estimate of polynuclear percentage as suggested by Sondern, divides his series of observations into two groups: *A*, those which come under observation on or before the third day, and, *B*, those which come under observation on or after the fourth day. Class *A* is subdivided into (1) cases of acute catarrhal appendicitis; (2) cases of early purulent appendicitis without walled-off abscesses, and (3) cases of chronic appendicitis without pathologic evidence of the real or imagined acute exacerbation. Class *B* is divided into (1) cases in which there is a very small and disappearing abscess. In drawing his conclusions Dr. Wilson thinks the following statements defensible: 1. Sondern's hypothesis, that the polynuclear percentage is an index of infection, the total leucocytosis an index of body reaction, and their proportional relationship an index of resistance, seems to be supported. The more important exceptions to this are in moribund cases and perhaps in children. 2. As practically applied in early appendicitis cases, the disproportional polynuclear increase, *i.e.*, a rising resistance line, indicates a more or less severe infection, which is not being properly cared for by the body. The higher and longer this line, the more serious the case. 3. A proportional polynuclear percentage or a disproportionate polynuclear decrease, if well marked, indicates mild or well-cared-for infection. 4. The value to the surgeon in early cases is but little, since in most early cases the patients are operated upon anyway. 5. In cases between the fourth and fourteenth days, the resistance line is of great value to the surgeon in indicating the patient's poor resistance and the necessity for immediate operation. 6. In cases like those of *A*, 3, a horizontal or falling resistance line indicates that the patient is taking care of the infection. If the infection is severe, as shown by a high though falling line, the patient may perhaps best be given medical treatment rather than submitted to operation. 7. The resistance lines should be determined daily in such cases as *B*, 1; the patient should be operated upon if the line begins to rise. (Northwestern Lancet, Minn., July 1.)

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STOVAIN: ITS CHANGES IN THE NERVOUS SYSTEM AFTER SPINAL ANÆSTHESIA.

Dr. Spielmeyer examined the central nervous system in thirteen subjects after spinal anæsthesia. The death of the patients was due to peritonitis, sepsis, or cachexia in from two days to a week, after the injection, except one case in which the anæsthesia was responsible, the patient dying in coma forty-eight hours after the operation.

The neurohistologic findings in these cases, and in considerable experimental research, showed degeneration in the motor ganglion cells of the anterior horn of the spinal cord. These motor elements seem to be especially susceptible to the action of stovain. The changes were observed in this class of cells high in the neck as well as low down, and in some the changes seemed to be irreparable. He adds that none of these changes were discovered in the cases in which the dose of 0.07 Gm. (0.9 grains) stovain had not been surpassed. In the fatal case 0.12 Gm. (1.7 grains) stovain had been injected; paralysis of the respiration was the first sign of trouble. (Münchener medizinische Wochenscrift, August 4, 1908.)

STROPHANTHUS.

As to the question now being agitated as to which species of strophanthus should be adopted in the new German Pharmacopœia, E. Gilz thinks strophanthus gratus would recommend itself above all others, but thus far this can be obtained from West Africa only in small quantities, so that it must be left out of consideration for the present. He therefore recommends strophanthus hispidus which deserves the preference over the kombé variety, which latter cannot as yet be identified with perfect botanic certainty. Strophanthus hispidus is being cultivated in considerable portions of the German colony of Togo. (Deutsch. Pharm. Gesellsch. Berichte, page 284, 1908.)

TANNYL: A NEW INTESTINAL ASTRINGENT.

Of this new synthetic compound Umber writes: It is a gray-brown powder, rather insoluble in water, and of indifferent taste. It is a tannic combination of oxychlorcasein, and was tried on 42 patients afflicted with intestinal disorders of various kinds. It proved most efficient in the difficult cases, the diarrhœa of tubercular patients. It served well in every case of acute intestinal and gastrointestinal catarrh, also in chronic intestinal catarrh in connection with a proper diet, and in severe colonic ulcerative inflammation with bloody diarrhœa. Tannyl is given in doses of from 1 to 3 grams (15 to 45 grains) before each meal daily, in salep decoction or oatmeal gruel, if necessary, until the stools become normal. Children may be given this remedy without the least harm. (Therap. d. Gegenwart, No. 3, 1908.)

VENESECTION.

J. Daland, Philadelphia, remarks on the present neglect of the therapeutic use of venesection, which he attributes to the prejudice caused by its former overuse, the fear of weakening already enfeebled persons, the prejudice on the part of the laity, the failure of many physicians to recognize its indications and limitations and, lastly, to the belief that a small, weak pulse is an absolute contraindication to blood-letting. Usually it is resorted to as a palliative or life-saving measure, but he points out that it is indicated in certain cases of valvular disease with well-marked fail-

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ure of compensation, in which there is extreme orthopnœa, cyanosis, tumultuous cardiac action, small, rapid pulse, distention of veins of head and neck, weak apex beat displaced to the left and seen and felt over a larger area than normal; increase in area of cardiac dullness to the left and right, and not infrequently accentuation of the pulmonic second sound. Blood-letting is especially indicated if these symptoms and signs are progressive in spite of the ordinary cardiovascular remedies. In such cases twenty ounces of blood may be taken slowly from the median cephalic vein, and if myocardial degeneration is not excessive the relief is prompt. Here the small, weak pulse is due to venous congestion and overdistention of the right side of the heart. The relief may be only temporary, but it gives ordinary remedies a chance to act which was before impossible. The above symptoms may occur late in the disease affecting the mitral and aortic valves. In well-marked myocardial degeneration, bleeding is useless. Venesection is of great value in mitral stenosis with extreme right ventricular dilation with failure of compensation and also frequently in such failure of compensation as described occurring in the course of arteriosclerosis. It may also be useful in acute pulmonary œdema from right heart dilatation, and in aneurism of the arch of the aorta the abstraction of eight or nine ounces can temporarily relieve dyspnœa or pain. In all cases of failure of compensation of the kind described, exudates in any of the serous cavities should be removed before resorting to venesection. Lastly, Daland speaks of blood-letting in case of extremely dilated right heart from pulmonary obstruction in pneumonia, in which the abstraction of from twenty to twenty-four ounces may save life. Certain deaths following venesection in pneumonia are due to a prior formed thrombus, others to previous myocardial disease. The bleeding should, therefore, be not too long delayed to prevent thrombosis or excessive toxæmia. The good results of bleeding in uræmic hypertention and in certain cases of apoplexy are also mentioned. (Journal of the American Medical Association, August 29, 1908.)

Book Reviews

ESSENTIALS OF DIETETICS IN HEALTH AND DISEASE. A Text-book for Nurses and a Practical Dietary Guide for the Household. By Amy Elizabeth Pope, author, with Anna Caroline Maxwell, of "Practical Nursing" and Instructor in Practical Nursing and Dietetics in the Presbyterian Hospital School of Nursing; Instructor in Dietetics in the Schools of Nursing of the New York Hospital, Mt. Sinai Hospital, and Smith's Infirmary, Staten Island; and Mary L. Carpenter, Director of Domestic Science of the Public Schools, Saratoga Springs, New York. New York and London: G. P. Putnam's Sons; The Knickerbocker Press, 1908.

In perusing over this book, the reader at once notices how admirably the work is arranged in a compact and comprehensible form. It covers the scope and needs of nursing schools and makes a useful dietary guide for the home and physician. The subjects dealt with are of pressing and every-day importance. Some of the subjects are: "Uses of Food," "Digestion and Absorption of Food," "Milk and Milk Derivatives," "Eggs," "Feeding of Infants and Children," "Diet in Disease," etc.

In the chapter devoted to milk, it deals with the nature and action of germs, composition of milk and cream and with milk derivatives.

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A special part of the book is devoted to recipes, describing very fully the manner of preparing the various foods.

The authors also discuss the nutritive value and digestibility of foods, method of planning menus, calculating dietaries, and tests for freshness of food.

The chapter devoted to diet in disease is of especial importance as it dispels all doubts regarding the kind of food to be given to sick patients. The authors have outlined a diet for each disease.

Many tables, giving the approximate composition of the different foods, are scattered throughout the book, in order that one can easily make out a diet table.

This small volume should be possessed by every nurse and those who take care of the sick.

POINTS OF PRACTICE IN MALADIES OF THE HEART. Lumlean Lectures at the Royal College of Physicians of London. By James Sawyer, Knt., M.D. (Lond.), F.R.C.P., F.R.S. (Edin.), F.S.A., Consulting Physician to the Queen's Hospital; Lately a Professor of Medicine in the Queen's College. Birmingham: Cornish Brothers, Ltd., 1908.

This small volume embraces three Lumlean lectures delivered at the Royal College of Physicians of London. In these lectures, the author merely treats some of the important points of diagnosis, of treatment, and of prognosis, in maladies of the heart, as he found them in his practice. Those cases which have not been subject to his experience have been left untouched.

Some of the important points treated are: "Recent Advances in the Histology and Physiology of the Heart," "Dynamic and Organic Affections of the Heart," "Worry and Functional Disorders of the Heart."

He also states the reasons for preferring a solid stethoscope to a tubular one in auscultation of the heart and gives many valuable points concerning maladies of the heart.

PHARMACOLOGY: THE ACTION AND USES OF DRUGS. By Maurice Vejux Tyrode, M.D., Instructor of Pharmacology in the Medical School of Harvard University. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut Street, 1908.

Professor Tyrode, in this small and concise text-book, has presented the essential facts of the action and uses of drugs for the ordinary medical student without going into deep discussions. He has treated the subject in a unique and exceedingly practical manner.

The book is divided into four parts: 1. Drugs Whose Constitutional Action is in Greater Prominence. 2. Ferments, Secretions and Extracts of Animal Organs. 3. Drugs Whose Local Action is Most in Evidence. 4. Drugs of Inorganic Origin.

Every part is well written and the subject matter has been surprisingly well brought up to date. The technical statements are put into free and easily understood English, thus making the text easily comprehended by the average student.

A short and concise summary of the general action is found at the end of each group description. Following this is the therapeutic action and, lastly, a brief description of the different medicines and their doses.

The work, however, is exceedingly meritorious and will be a great aid to both the student in course and the practitioner on duty.

DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS. By Jay Frank Schamberg, A.B., M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine; Diagnostician to the Bureau of Health and Consulting Physician to the Municipal Hospital of Philadelphia; Fellow of the College of Physicians of Philadelphia; Member of the American Dermatological Association. Fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1908.

The aim of this book is to present a treatise on the subject, containing the chief facts of diseases of the skin and eruptive fevers, which are necessary and essential to the student who wishes to apply them in the practice of his profession. The diseases are divided into nine classes: I. Anemias; II. Hyperemias; III. Inflammations; IV. Hemorrhages; V. Hypertrophies; VI. Atrophies; VII. New Growths; VIII. Anomalies of Secretions of Glands; IX. Neuroses of the Skin. This is followed by diseases of the mucous membranes, actinotherapy and radiotherapy and acute eruptive fevers. The very latest advances in the therapeutic use of the Finsen light, x-ray and radium are discussed at length. Illustrations showing how the treatment is applied, which is followed by a description of the results of treatment.

The author not only describes skin diseases but also all the diseases which are characterized by cutaneous manifestations. He gives the beginner a proper method of procedure in the application of the x-ray tube, Finsen light and radium together with such details as are essential to a thorough understanding of the matter at hand.

The descriptions of the diseases are clear, directions as to treatment are definite and the book is written from the standpoint of the latest experience in the domain of dermatology.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

TREATMENT OF TUBERCULOSIS OF THE LUNGS.

BY JOSEPH WALSH, M.D.,
Assistant Medical Director Henry Phipps Institute.

THE general symptoms manifested by patients with tuberculosis of the lungs are: cough, expectoration, loss of weight, stomach disturbances, chills, night-sweats, hæmorrhage, acceleration of the pulse-rate, and fever.

The general treatment for tuberculosis of the lungs, as recommended to-day, consists in unlimited fresh air, management of the diet so that the patient will get an excess of good nourishment, and regulation of rest, exercise, or work.

All the symptoms accompanying the disease are directly or indirectly due to the systemic infection; the natural thing, therefore, is to ignore the particular symptoms and treat the general condition. In the very great majority of cases the symptoms will clear up or ameliorate so rapidly that treatment for the special symptoms will be found unnecessary.

How the treatment acts is illustrated by the two following cases, an acute and a chronic case treated at their homes:—

CASE I.—An acute case. F. R., male, 27, married, cigar-maker by trade, came to me on January 15, 1903. His family history was perfect and he had never before consulted a physician. There was exposure to contagion in two ways, namely, through his wife, who had a very mild chronic tuberculosis, and possibly through his occupation of cigar-maker.

His history was that he had been in perfect health, absolutely robust, up to four months previously, when he took a "cold." After a slight improvement it gradually became worse, he lost his appetite, gradually decreased in

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weight, until now he had the appearance and subjective symptoms of a full-fledged consumptive. He had lost forty pounds in weight (he had been one hundred and seventy five months previously), was coughing, especially at night, was expectorating considerable yellowish sputum, was dyspnœic, and was so weak that he could scarcely stand.

Examination.—Respiration, 36; pulse, 140; temperature, 100.4 at 2 P.M.; heart, negative; lungs, decided dullness over both apices with impairment of resonance on the left to the second rib anteriorly and to mid-scapula posteriorly. There was bronchial breathing over both apices and prolongation of expiration all over both lungs. The sputum showed tubercle bacilli.

His household goods were packed and he was about to start for Colorado, when he was advised to inquire about the White Haven Free Sanatorium. He was too acutely ill for the White Haven Sanatorium, and likewise too ill to attempt a long trip. I was unwilling to give anything but an unfavorable prognosis while the acute condition lasted, but insisted that his only chance for life was in remaining at home and carrying out the treatment there as well as possible.

It happened that he was living on the outskirts of town in a rather pleasantly situated two-story house with a piazza. He was given the second-story front room, and the bed was placed in the bay-window. Due to the perseverance of a plucky wife, the windows were never closed from the time I first opened them. Despite much inclement weather during the next two months, February and March, he slept close to these open windows every night, and during the second month sat out from six to eight hours on the piazza every day. One trip up and down a short flight of stairs was the limit of his exertion for two months. He was kept at rest until his pulse was below 110.

For nourishment he began with one solid meal in the middle of the day, and two quarts of milk and six raw eggs distributed over the rest of the day. He gradually increased this till he was taking for breakfast (7.30 A.M.) one and one-half pints of milk and three raw eggs, with fruit and cereal; at 9.30 A.M. one pint of milk and two raw eggs; at 12.30 P.M. dinner, composed of soup, meat, three or four kinds of vegetables, and fruit with milk as a beverage; at 4.30 P.M. one pint of milk and two raw eggs; at 6.30 P.M. one and a half pints of milk and three raw eggs with milk-toast or boiled rice; at 9 P.M. a glass or two of milk, not infrequently with an egg.

For the two months he was at rest I had no chance to weigh him. At the end of this time he came to my office and I found that he had gained only two pounds. This was at the time not encouraging, though later I was able to attribute it to the acuteness of the symptoms.

His cough had, however, lessened materially, he had stopped expectorating, and he was feeling well. He was now put on graduated exercise in the form of walking. He continued his fresh air and nourishment. From this time he gained steadily. On his second visit to my office (at the end of the third month) he had gained six pounds; at the end of the fourth month he had gained ten pounds and all subjective symptoms had disappeared entirely; that is, he felt perfectly well, had not the slightest cough, and never expectorated.

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The next three months he spent with friends in the country and came back to town at his old weight, one hundred and seventy pounds (when I first saw him he weighed one hundred and thirty). During the last month he went back to three solid meals a day. He returned to work seven months after I first saw him, has worked every day since, and has never had a symptom of any kind.

The only medication he ever had was combinations of pepsin, hydrochloric acid, phosphoric acid, strychnia, arsenic, nitro-glycerine, and a few small doses of creosote to correct a temporary stomach disturbance. In addition to these drugs by the stomach he used an inunction of europhen (a preparation of iodine) dissolved in olive oil. From the beginning of the treatment he never had any set back—not even a cold.

CASE II.—A chronic case. McD., male, 27, married, a dental student, came to me on September 9, 1902, in the vacation between the second and third or last years. His family history showed his father and mother living, though suffering from what he described himself as a very chronic tuberculosis of the lungs. The history of exposure, therefore, extended over his whole life.

His personal history was that he had a hæmorrhage three years before during a severe attack of grippe, and had been sick off and on during his entire first year as a student of dentistry, having had at one time bronchitis and again pleurisy, but had recuperated during the vacation. During his second year he had been reasonably well.

During the present vacation he had worked pretty hard, had lost weight (his highest weight was one hundred and thirty-five; he was now one hundred and thirteen), and two days before I saw him had quite a severe hæmorrhage. He had had a slight cough for years which was now annoying him considerably. The other symptoms were expectoration, dyspnœa on exertion, loss of appetite, constipation, and rather profuse night-sweats (every night).

Examination.—Respiration, 30; pulse, 112; temperature, 100 at 11 A.M.; heart, normal; lungs, absolute dullness on the left to the second rib anteriorly and to spine of scapula posteriorly, with bronchial breathing. I found nothing else. His sputum showed tubercle bacilli.

Treatment.—Rest till the next visit (three weeks later), sleep alone and with windows wide open at night, and sit out on the pavement all day. (There was no porch to the house and the house was in the center of a thickly inhabited district.) He was boarding and protested against making the meagre meal the boarding-house served for lunch his one solid meal. The solid meal was, therefore, allowed in the evening (6 o'clock), with milk and eggs the rest of the day. Though his appetite was poor he managed to force two and a half quarts of milk and four raw eggs in addition to one solid meal for two weeks.

The night after the examination he had another hæmorrhage, yet when he came to the office, September 30th, three weeks after the first visit, he had gained seven pounds. Three weeks later he had added nine pounds more to his weight, and subjective symptoms had entirely disappeared when he caught

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a very severe cold which cost him four pounds in seven days, and a recurrence of all the symptoms. For this he was sent to bed for one week.

Two weeks later, October 30th, he had regained his lost weight, was again free from subjective symptoms and insisted on returning to work. He was allowed under protest, though after events proved the protest uncalled for. In the meantime he had gradually increased his diet to one solid meal, three quarts of milk and nine eggs. On December 15th, though he had been at work six weeks, he weighed one hundred and forty-one pounds, or twenty-eight pounds more than when I first saw him on September 9th. Since the cold, two months previously, he had constantly increased in strength and progressed without symptoms of any kind. For four weeks he had been going to bed at 11 P.M. and rising at 6.30 A.M.

Most of his time was spent in the mechanical dentistry room where the amount of fresh air was limited by the objection of others to open windows in December. He slept, however, with wide open windows at night and rode to and from the college, a distance of three miles, standing on the front platform of the car. He now decreased his diet to three pints of milk, four eggs, and two solid meals.

He graduated successfully in the spring, weighing one hundred and forty-nine pounds, thirty-six pounds more than when I first saw him. He has visited my office or I have heard from him off and on since then, over four years, but he has never had a symptom of his old trouble. What he says is that he never knew what it was to feel well before. His pulse remains constantly under 90, his temperature does not fluctuate one degree in the twenty-four hours, he has no cough, no expectoration; in fact, as I said, no symptom.

The only medication given was strychnia, tincture of nux vomica, Fowler's solution, pepsin, hydrochloric acid, phosphoric acid, nitroglycerine, phenacetin, and salol. The first six remedies were administered in the way of tonics, alone or in various combinations; the nitroglycerine, gr. $\frac{1}{100}$, three times a day, was given on account of the spitting of blood; the phenacetin and salol for the cold in the head, which was associated with pains throughout the body. (I may say here that as time progresses I have given drugs like phenacetin and salol less frequently.)

In both these cases exactly the same treatment was carried out, namely, rest while there were acute symptoms, either due to a cold or the tuberculous process itself, forced nourishment and abundance of fresh air. Practically nothing else was done, because I do not believe that the simple tonics administered had very much bearing on the cures.

In the first case rest was called for by the general weakness, the rapid pulse, and the temperature. The management of rest is one of the most difficult things to learn in the treatment of tuberculosis, because each case requires special study, yet there are general symptoms demanding it in any sort of a case, namely, elevation of temperature above 101 (or even 100) any time during the day, acceleration of the pulse-rate above 120, marked emaciation, and marked weakness. Even when exercise has been instituted it must be carefully watched. If this exercise produces an elevation of temperature or accele-

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ration of the pulse-rate, it must be stopped or cut down. Under no circumstances should it ever be continued to the limit of fatigue. Since the first rule of medicine is to do no harm, it is safe to say that when in doubt rest should be insisted on; in other words, rest is less likely to do damage than inadvisable exercise.

The fresh air was obtained in both cases by the very ordinary means insisted on with all patients, namely, they must sleep in a room alone with wide open windows no matter what the weather; they must be outside as many hours of the day as possible, resting when exercise is not advised. There is positively no contra-indication to the open windows in the bed room: elevation of temperature, acute cold, nothing must be permitted to close the windows.

In the one case the patient sat out on a porch all day; in the other during his period of rest he sat out on the pavement. In the latter case when the patient went to work, he managed to get a work-table in the mechanical dentistry room near the window, and despite the not infrequent complaints of those about him he usually kept it open. Going to and from school he rode on the front platform of the street car, both in order to get the fresh air and avoid contact in a closed car with the crowds, where some one is practically always disseminating organisms of colds.

The only symptom complained of in the first case was the cough. He was, as he said himself, coughing night and day. No special therapeutic measure was enjoined for it, yet on the regime of fresh air and easily assimilated food, it cleared up entirely in eight weeks and was no longer troublesome after the third day. We find this result in practically all cases, especially before the formation of large cavities, namely, that the cough at least ameliorates considerably under fresh air and proper nourishment.

Sometimes, however, the cough is very troublesome, due not so much to the tuberculosis *per se* as to an acute cold or bronchitis complicating. These complications are readily recognized by the elevation of temperature, the appearance of the throat, and the moist râles found in the chest on auscultation.

The second case manifested such a cold at the end of the third week of treatment; his symptoms were sore throat, headache, diarrhœa, and a return of the cough in all its severity. Examination showed temperature 100.4, pulse 120, and on auscultation moist râles all over both chests. He was sent to bed for one week and the diet restricted to milk and raw eggs on account of the diarrhœa. The diarrhœa was not severe, and was ignored except for the benefit it might receive from the rest in bed and the restriction of the diet. The sore throat was treated by small doses of calomel ($\frac{1}{100}$ gr.), repeated about every fifteen minutes; the bronchitis by ammonium chloride in combination with a little pancreatin and tincture of nux vomica.

In all cases where the cough is not due to an acute cold I depend at first on the fresh air and regulated diet to clear it up; if it does not gradually improve every detail of the patient's routine is studied to see if anything is being done contrary to rule. Usually it is found that the patient has not been getting the proper amount of fresh air, or he has been introducing articles into his dietary not mentioned in the original routine, or has been taking

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various drugs on his own hook for the alleviation of the cough like various proprietary cough-tablets or an old woman's cough syrup.

If, despite the most careful regulation of the diet and all the fresh air possible, the cough and expectoration continue, the sputum is examined with special reference to streptococci, and if they are found creosote is given. Even without an examination of the sputum a general indication for the administration of creosote would be cough with profuse yellowish expectoration which did not clear up on general treatment.

Creosote has been in its time a most lauded and a most abused remedy. It is at present believed to have little or no effect on the tuberculous disease *per se*, but to have more or less influence on a streptococcic infection complicating. To accomplish results it should be given in quite large doses, and yet in such a way as not to irritate the gastro-intestinal tract. This is done by diluting it well and gradually increasing the dose. An easy routine way of prescribing it is in hot water. If the water is hot enough it will dissolve the creosote and be almost, if not quite, tasteless. In cases in which I administer it I begin with one drop three times a day, one half-hour before meals, and increase one drop every three days, insisting that it be diluted with at least one tablespoonful of hot water to each drop.

There is one thing that cannot be insisted on too strongly, and that is the importance of avoiding opium in any form in the treatment of tuberculosis of the lungs. Its influence for evil on the course of a tuberculous case is so marked that it is likely that we do not know its entire action in these cases, yet we do know that opium depresses all the functions which we ought to be stimulating. It depresses digestion, assimilation, and the already over-worked heart. It is most frequently administered for the purpose of controlling the cough, and is at best capable of giving but temporary relief not comparable with the permanent relief produced by the fresh air and the regulation of the diet.

Stomach disturbance as a symptom, either in the form of vomiting or indigestion, practically always yields to an easily assimilable diet of milk and eggs with solid food at only one meal. Occasionally absolute restriction to milk and eggs, and rarely peptonization of the milk for a short time, is required.

The diet of milk and eggs is sometimes complained of in advance on the old-familiar ground of biliousness. Biliousness to the ordinary patient means constipation with headache. He may be told at once that he will find no such result. The only reason for milk being constipating is on account of the small residue it leaves, this residue being insufficient to make a bowel movement. This is prevented in two ways: first, by the milk and eggs being ordered in quantities large enough to have a residue; second, by the taking of the solid meal. Personally I sometimes have complaints of too frequent bowel movements on the diet mentioned, but practically never of constipation.

Nevertheless, with a tendency to constipation, there is no objection to fruit at breakfast, or, as a matter of fact, at any time during the day. The first-mentioned patient took thirteen glasses of milk and ten eggs, the second twelve

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glasses (three quarts) and nine eggs. My usual orders to patients now are three quarts of milk and six eggs daily.

The eggs were taken in several ways, but never with alcohol, namely, straight from the shell, with pepper and salt, with lemon, pepper and salt, or beaten up in the milk with or without nutmeg, pepper or salt. Alcohol, even in the form of sherry wine is not recommended.

THE DIAGNOSIS AND TREATMENT OF HAEMORRHOIDAL DISEASE.[1]

By COLLIER F. MARTIN, M.D.,
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Clinically, hæmorrhoids may be divided into two varieties: external and internal. External piles are covered with true skin, and the tissue involved is supplied or drained by the inferior hæmorrhoidal veins. Internal piles are covered with mucous membrane, and the diseased veins composing them are made up of the superior hæmorrhoidal plexus. The middle hæmorrhoidal plexus, supplying as it does the outer surface of the rectum and the levator ani muscles, does not enter into the formation of any form of hæmorrhoids.

External piles are subdivided into two varieties: the thrombotic pile and the hyperplastic pile or anal tag.

In the thrombotic pile the clot occurs, usually, in the vein itself, one or two of the vein coats probably persisting to form a capsule for the tumor. The tumor occurs suddenly after straining at stool or after some unusual muscular effort. The skin at the margin of the anus is elevated, red, and at times œdematous. There is sometimes great pain, generally in proportion to the amount of spasm of the sphincter excited by the clot which acts as would a foreign body. There is always a sense of discomfort and fullness about the anus.

These tumors either undergo gradual absorption, as a rule, leaving some hypertrophy of the overlying skin, the result of the inflammatory process, or they may become infected by bacteria brought to the clot by the anal and peri-anal lymphatics, resulting in abscess and fistula formation.

If seen early these tumors should be removed to prevent any possible infection. If seen several days after they have formed and the inflammation seems to be subsiding, we may simply treat the case palliatively, allowing nature to complete the cure.

In removing these tumors, rather than transfix the tumor and turn out the clot and pack the cavity, it has been my practice for several years to anæsthetize the tumor with a ½-per-cent. cocaine solution, and then grasping the tumor with a volcellan forceps, remove the entire clot and all of the overlying skin with curved scissors. This leaves a flat denuded area; the vein is severed at a point where it is healthy, thus allowing the cut ends to retract, greatly

[1] Read before the Northern Medical Association, April 10, 1908.

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lessening the amount of bleeding. The wound may be dressed with a simple compress of iodoform gauze, held in place with a "T" bandage. The post-operative pain is slight, there is no packing to be replaced, and the wound heals kindly in from five to eight days. There is no resulting skin fold, as was the case with the old method, and the patient is not usually detained from his business.

The cutaneous variety of piles often become inflamed and swollen as the result of a complete or partial strangulation. They may also become inflamed from scratching, as is seen in cases of pruritus. They are not uncommon as an annoying complication following labor.

The treatment of this condition, from an operative standpoint, should consist in a divulsion of the sphincters, followed by a complete removal of the offending folds. Care should be exercised to cut the folds off flush with the anal margin, as there will be less after-pain than when small folds of skin are left to keep up the inflammation.

If operation be refused, then a soothing ointment may be prescribed. If the patient is suffering intensely he should be put to bed with the hips elevated and hot compresses may be applied. It is better to apply firm pressure at the same time, rather than trusting to the use of a hot-water bottle. Compresses of lead water and laudanum or of a saturated solution of magnesium sulphate are sometimes very effective. Care should be taken to keep the compresses of magnesium sulphate constantly wet. Cold compresses should not be used when there is a condition of strangulation, as extensive sloughing is apt to follow.

There are only two varieties of internal piles: the nævoid or strawberry pile, and the venous hæmorrhoid.

The first variety does not, as a rule, form any tumor, consisting only in a dilatation of the capillaries of the rectal mucosa. This area is usually sharply circumscribed and may be slightly elevated above the surrounding healthy mucosa. The only symptom is that of persistent and occasionally alarming hæmorrhage. The treatment consists in destroying these dilated vessels by the application of nitric acid or the Paquelin or electro-cautery. The cauterization may have to be repeated the second or even the third time to completely control the hæmorrhage. A suppository of five grains of iodoform may be inserted twice daily until healing is complete.

The venous hæmorrhoid, which is the variety referred to when we speak of internal piles, is a varicose condition of the small venous blood-lakes found in the submucosa just above the internal sphincter. In addition to the general signs of varicosity, such as thickening of the coats of the veins, elongation and tortuosity, we find a thickening of the overlying mucosa, and considerable inflammatory deposit in the submucosa.

The principle factors in the causation of internal piles are anything which will temporarily or permanently interfere with the venous circulation in the internal hæmorrhoidal veins, and a phlebitis and periphlebitis due to inflammation or a low grade of infection.

The symptoms of internal piles in order of their frequency are: bleeding, protrusion, pain, and a mucoid discharge. The bleeding is venous and generally

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occurs during or immediately after stool. Where bleeding occurs in jets, it is caused by the rhythmic contraction of the muscles concerned in the act of defecation. But rarely do we meet bleeding due to the rupture of an artery.

Protrusion is due to two factors: first, to the increase in size of the tumor, permitting the tumor to appear at the anal orifice, and, *secondly, to the tendency of the rectal musculature to expel any foreign body from the rectum.* This same mechanism is brought into play in the production of intestinal polypi where we have a hyperplasia of the superficial coats of the gut. In old people we do occasionally find a degree of protrusion or prolapsus which is greatly augmented by a relaxed condition of the sphincters, but even here the original condition was one of spasm rather than relaxation. It has also been noted by some authors that internal piles, under certain forms of irritation, seem to be made up of erectile tissue. This is frequently noted during an instrumental examination. The sudden filling up of the pile is not due to instrumental pressure on the veins, for this occurs even when pressing on the lower margin of the pile, but seems to be caused by a contraction of the muscular coat of the bowel compressing the veins where they pass through to run on the outer surface of the rectum.

Pain, when it does occur, is due to spasm of the sphincter muscles, excited by some complicating condition such as a small fissure or rectal ulceration. Great pain is also to be noted in those cases suffering from an attack of strangulation, the sphincters suddenly contracting upon the protruded piles preventing their return to the rectum.

A free discharge of mucus is to be noted in hypertrophic catarrhal proctitis. This is more often seen in the aged, but is more or less marked wherever the piles have existed for any length of time.

The medical treatment of internal piles may be said rather to be directed to the relief of the symptoms than to the removal of the pathologic condition. We will so consider it.

Bleeding may be controlled by rest in bed, the administration of soothing laxatives, the injection of astringents, such as cold water, copper sulphate or adrenalin chloride, and the use of astringent suppositories, such as tannic acid, adrenalin chloride, iodoform or ichthyol. Opium is to be avoided for the reasons that a habit is sometimes started in this way, and also it often increases the constipation. Applications of silver nitrate, nitric acid, or persulphate of iron may be made directly to the eroded surface of the pile. A divulsion of the sphincters will often stop the bleeding for some months, but will not cure the hæmorrhoids.

Protrusion may be lessened and even prevented for a long period by a divulsion, the free use of cold water applied to the parts or injected into the rectum, and by the use of styptic injections, suppositories, ointments, or applications.

The catarrhal discharge may be lessened by building up the patient's general condition, the complete evacuation of the bowels by the means of laxatives and enemas, and the use of astringent injections.

Strangulation is an exceedingly painful complication of internal piles, and

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is usually associated with a strangulated condition of the peri-anal tissues or external piles. The treatment consists in the reduction of the mass and the retention of the tumors in the rectum until the congestion or inflammation has subsided. Firm pressure, made over the anus, with a hot compress, will often assist in the reduction. Do not use cold. A compress of a saturated solution of magnesium sulphate will often relieve the spasm and pain enough to allow for the necessary manipulation. Should the patient permit the use of a general anæsthetic, nitrous oxid or ether may be administered, the sphincters stretched, and the piles replaced. They will generally remain in the rectum except at stool, at which time they can easily be replaced. A "T" bandage and compress is rarely necessary to hold them up. The divulsion will stop the bleeding and the strangulation, but some operative treatment should be advised.

For the complete cure of internal hæmorrhoids, many methods have been devised. Candor forces us to say that any one of these methods will give about equally good results, providing the operation has been properly performed and the case operated on has been one suited for the particular method selected. The operator should select the form of treatment or the special technique which he can most skillfully perform and which, in his estimation, will most likely be followed by permanent results. We must not forget that the patient deserves some consideration, and that there are times when some complicating conditions will make us materially modify our technique.

The injection treatment may be employed in those cases where more radical operation has been refused or where it is desirable to avoid the use of ether or chloroform. In properly selected cases the results compare very favorably with the ligature and the clamp and cautery operations. Carefully used the dangers are no greater than with other methods, but it must be remembered that just as much care as to technique and asepsis must be used as in any operation about the rectum. External hæmorrhoids should never be treated by injection.

Briefly, the method may be described as follows: The sphincter muscles should first be divulsed under nitrous oxid anæsthesia. This is done to prevent the unpleasant symptoms which will follow should a slough develop. Sloughing is also less likely to occur where the muscular irritability has been lessened. After three or four days an injection should be made into the largest pile. The tumors should not be protruded for this, but the piles should be injected while in the rectal ampulla. This may best be done through a speculum, the small conical instrument I use being most convenient. The speculum should be removed before withdrawing the syringe and needle, thus preventing the backflow of solution which may be occasioned by the pressure of the instrument. The needle is inserted into the most prominent portion of the pile and from seven to twelve minims of the solution is injected. In my own work I employ a 50-per-cent. solution of phenol boboeuf, but any of the other standard solutions, such as Shuford's, may be used. The treatments should be given at intervals of from three days to a week, depending upon the sensitiveness of the patient. If properly used this method will give less discomfort to the patient than any of the operations I know. (For details of method see my article in *American Medicine*, August 27, 1904.)

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The galvanic and faradic currents have both been used in the treatment of hæmorrhoids, but as they necessitate a complicated apparatus and a special technique, this method will not be considered in this paper.

The ligature operation for hæmorrhoids has many warm admirers, particularly the late Mr. Allingham, of London, and Dr. Mathews, of this country. In this operation the piles are dragged down and, after cutting a deep groove at the base of the pile, separating the skin from the mucous membrane, a stout ligature is either passed around the pedicle thus formed or the pile is transfixed with a double ligature and the tumor tied in two parts. The redundant tissue is trimmed off, leaving enough to keep the ligature from slipping. Unless the operator has had a good deal of experience with this method the post-operative pain and the strangury are apt to be pronounced. Much depends upon how the ligatures are applied. Where a general anæsthetic is contraindicated, this operation may be done under local anæsthesia, using either cocaine, eucaine, or Gant's method of infiltration with water. With the infiltration method care must be taken to dissect well under the pile, for if we allow ourselves to be deceived by the size of the protruded mass, we may only ligate the œdematous mucosa, leaving the pathologic veins intact.

The clamp and cautery operation is the one which will probably be followed by the most radical results, and by the fewest unpleasant sequelæ in the hands of the average operator. The same division between the skin and mucous membrane should be made as in the ligature operation, and the clamp should be applied in the long axis of the bowel. The stump grasped in the clamp should be thoroughly cooked with the cautery iron at a low heat, care being taken to prevent excessive charring of the tissues. Stricture following this operation is not due so much to the placing of the clamp across the long axis of the gut as it is to excessive cooking of the tissues, causing wide and deep sloughs. Also, if too much mucous membrane is pulled up in the clamp and if three or four such burns are made, almost the entire lower inch of the rectum may be denuded before we are aware of the fact. Properly performed the operation is followed by little pain and retention of urine is not very frequent. If the patient be allowed to sit on the edge of the bed to pass his water, catheterization is rarely necessary.

In special cases we may resort to the more radical operation of excision. The Tuttle modification of the Whitehead operation, which consists in a blunt dissection of the whole pile-bearing area of the lower inch of the rectum, is a splendid operation when properly performed, but requires considerable experience. Earle uses a curved clamp which grasps the hæmorrhoids parallel to the margin of the anus. The piles are removed and a continuous suture is passed through the tissues while the clamp is in place. The clamp is withdrawn and the suture is pulled tight. By grasping successive portions of the hæmorrhoidal area in this manner, a complete circular excision may be done with practically no loss of blood.

Where the hæmorrhoidal tumors are sharply defined and there is healthy mucous membrane between them, they may be removed and the mucosa sutured after the methods of either Earle, Pennington, or Laplace.

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In conclusion let me say that while these operations, where suture material is used about the rectum and anus, may give brilliant results in the hands of an experienced surgeon, and particularly so in the hands of their respective originators, a faulty technique will only result in diaster and bring discredit upon the operator. Sutures about the anus are apt to become infected, and should be avoided unless we are reasonably sure that we have a clean field for operation. Many bad results would be avoided if the operator would see that the patient is properly prepared. Above all things, whatever operation be selected, be sure that it is properly performed. Faulty technique is responsible for most of the failures and many of the complications we meet.

SOME ASPECTS OF ALCOHOLISM.[1]

By AUSTIN O'MALLEY, M.D., Ph.D., LL.D.,
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One of the most important symptoms of alcoholic intoxication is a temporary disturbance of mental equilibrium—a passing insanity. This condition may readily take on a permanent quality. Insanity is a common condition, but it has not been satisfactorily defined. It supposes an appreciable unsoundness of the will, memory and understanding, or of one or two of these faculties, but no alienist has given a short differentiation of that unsoundness. Where shall we draw the line between the weak but responsible will and the insane will? What degree of opacity between the intellect and the world separates the ignorant man from the lunatic? The extremes of sanity and insanity are readily recognizable, but the intermediate degrees are not clear. There is no test to apply to all cases; each must be diagnosed from its peculiar symptoms; but the will of an insane man is always weak. It cannot deny or defer the gratification of a desire, nor can it keep up an effort. Even in its lightest forms insanity is selfish and impolite, because it lacks the force of will necessary to take trouble. It forgets great future benefit for slight present gratification. The insane man is idle, or busy only in work that he likes, in pleasurable activity. A marked quality of sanity is the capacity for sustained work.

These defects are found commonly in sane persons, but the lunatic cannot rise superior to them, and there is added to defects of will a warped intellect. He cannot adjust himself to his surroundings, and the fault is in himself, not in the circumstances. His intellect may be brilliant, but sooner or later it shows a flaw. The insane man is not a free rational agent.

Between sanity and morality there is a close connection. Morality, as far as the agent is concerned, apart from the nature and circumstances of the deed, supposes, first, voluntary acts, or acts which proceed from the will with a knowledge of the end toward which the acts tend; and, secondly, free acts, or acts that under given conditions may or may not be willed. If by unavoidable

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[1] Read at the Kensington Branch of the Philadelphia County Medical Association.

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chance one stumbles against a man standing at the edge of a wharf, knocks him into the water, and drowns him, the act has no element of morality in it, because it is not voluntary and free. If a mind is diseased and, impelled by a mad notion of persecution, it brings about a like killing, there is no question of morality, because the agent is not free, and when fully analyzed his action is not voluntary.

An act is more or less voluntary and free, and, therefore, more or less moral, as the agent is affected by ignorance, passionate desire, fear, or disease. Ignorance, fear, and disease may be such as to remove all quality of morality from an act. Certain diseases or pathological conditions, especially of the nervous system, can take out of an act the elements of voluntariness and freedom that are necessary to make the act moral or immoral, provided, however, these pathological conditions are not brought on through the fault of the subject in which they exist.

Now, alcoholism readily passes over into unmistakable insanity, and it always is a cause of nervous degeneration in the children born within its influence. If, then, a man voluntarily becomes drunk with alcohol or some other drug, he is, of course, accountable for the evil he may unconsciously do while under the influence of that drug; and if he begets an idiot or a criminal imbecile in his drunkenness, he is accountable for the state of the child. There may be extenuating circumstances—few drunkards are fully conscious of the extent of evil in alcoholism—but throughout the world there is a fair knowledge of the broad, bad effects of inebriety.

Apart from the other requirements that go to make an act moral, the agent must be, as we said, sane; that the act be immoral, he must be sane or insane through his own fault. If a man knows that an alcoholic is liable to beget a criminal imbecile solely because of the alcoholism—and most are more or less clearly aware of that fact—this father or grandfather is more or less accountable for every larceny, rape, and murder done by the imbecile. The law should, therefore, put the imbecile into safe keeping, and instead of fining the father five dollars, it should so use him that the world is rid of him.

Chronic poisoning by alcohol induces arteriosclerosis, degeneration of nervous cells, wasting or hypertrophy of the heart-muscle, and fatty degeneration of the liver and kidneys. The vasomotor centers are affected, and the capillaries especially are consequently diminished in caliber. This brings about blood-stasis, a lack of nourishment, and a faulty elimination of the refuse-products of metabolism. In the presence of alcohol in excess the hæmoglobin cannot supply oxygen and carry off carbon dioxide. Here Dr. Sajous's experiments with the ductless glands, described in his book on "Internal Secretions," enter as a possible explanation of the pathology.

Alcohol absorbs the necessary water from the tissues, and it thus becomes a corrosive poison. It depresses the activity of organs by injuring the innervation. It affects the brain, and as the cerebral gray matter, especially the pyramidal cells, are almost certainly the physical instruments of thought, will, and memory, or the means of communication between the mind and the outer world, the exercise of these spiritual faculties is checked or inhibited by it.

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Those that become drunkards are usually of a neuropathic constitution through inheritance or abuse. Severe diseases, like influenza, syphilis, typhoid fever; injuries to the head, sunstroke, shock, worry; the disturbance that may accompany pregnancy, lactation, and so on, cause a nervous depression which is soothed by alcohol, and thus a habit is fixed. The use of proprietary medicines as tonics is a source of drunkenness, but since the makers of these medicines are now obliged to tell the quantity of alcohol in the mixtures this source of inebriety may be slightly dammed off. The chemist of the Massachusetts State Board of Health analyzed about sixty of the proprietary tonics, and found that the weakest is twice as strong in alcohol as beer, most of them stronger than the heaviest wines, and a large number as strong as whiskey.

The irritation of the American climate is a prolific cause of alcoholism. The ultraspectral solar rays irritate or destroy animal cells unless these cells are guarded. Workers with Roentgen rays, unless protected, receive severe burns, become impotent, and so on. The natural protection from such rays in solar light is sufficient skin-pigmentation. Each race in its natural habitat has evolved enough pigment to protect itself from the light of that locality. The blonde above the 50th parallel has enough pigment for the light there, the negro enough for the tropics. Skin-pigment also is related to temperature, but that is a secondary matter. If a race moves far south of its natural habitat, it is irritated or finally destroyed by the sun, as the Vandals were in Africa, at the level of New Orleans, or the Lombards in Italy, and the Goths in Spain. The southernmost boundary of the white man's natural habitat is the 35th parallel of latitude. This runs along the northern boundary of South Carolina. Below North Carolina the United States is not fit for the residence of any white man, even of the dark-skinned southern European. The English-speaking races in the United States came from a latitude and a sun-exposure found nowhere within the boundaries of this republic. A city as far north as Philadelphia is below Naples. Philadelphia's sun is more violent in actinic rays than any European sun above Naples; its summer heat is worse than that of the northern extremity of the Sahara Desert. The excess of sunlight in the United States so irritates and exhausts the nervous system of northern Europeans that in itself it is a cause for a tendency toward alcoholic stimulation and consequent inebriety. Our so-called energy and rapidity of motion are not virtues; they are a neurosis, a mere solar intoxication, a disease in races whose natural home is the cloudy part of northern Europe. With three times the inhabitants of England and Wales we had last year twenty-seven times the number of homicides, and these homicides followed the curve of intensest sunlight. Pennsylvania alone had forty-eight more murders last year than all England and Wales.

Alcoholism may be an effect of insanity; an early symptom, for example, of paresis or a part of the maniacal stage of circular insanity; but more commonly it is either a cause of insanity or an evidence in itself of certain species of mental unsoundness. The mental changes are gradual and progressive. The intellect is blunted, the judgment becomes foolish, the moral sense is dulled. The drunkard, for example, is always a liar.

Where genuine insanity comes with alcoholism delusions occur daily. It

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is one of the commonest symptoms of alcoholic insanity to suspect a wife or husband of conjugal infidelity. If a man that is a drunkard accuses his wife of infidelity, the chances are all in favor of her innocence, even if he swears he saw the infidelity. This symptom is found also in cocaine intoxication.

Another mental disturbance of acute alcoholism is *delirium tremens*, which is often inexactly called *mania a potu*. Delirium tremens is not a mania, but an acute hallucinatory confusion in which the consciousness is more impaired than in mania. Mania a potu is a real mania, and it is commonly transient, although it may leave permanent mental weakness with delusions.

In chronic alcoholism a paranoid condition may occur, and this often is incurable. That psychosis may come on suddenly or gradually. In true paranoia the delusions are systematized, but in this alcoholic pseudo-paranoia the enfeebled intellect cannot build up coherently even an hallucination. The patient's hallucinations, such as they are, are auditory and visual, and he may have delusions of persecution, especially of a sexual nature. These delusions of persecution may lead to homicide.

Occasionally alcoholic insanity takes on a paretic form, or it may be epileptic. Ten per cent. of alcoholics are epileptic. When the children of alcoholics are epileptic, the convulsions begin in these children about four years earlier than in children who are epileptic from other causes. If epilepsy is latent, alcoholism will excite it into action.

Alcoholism sometimes produces a condition of waking trance followed by amnesia. In such a state the drunkard may transfer property, carry out complicated professional actions, commit crime, take long journeys, and so act that no one notices his disordered mental condition. Then suddenly he awakens and he has no recollection whatever of what has happened during this trance. He appears to be conscious, but to have no memory of his consciousness.

Dipsomania is a form of impulsive degenerative insanity, and it is probably epileptic in origin. After a few days of insomnia and anorexia, there is an irresistible impulse to drink alcoholic liquors and to indulge in other excess. The patient drinks till all means of getting alcohol are exhausted. He will take crude alcohol, bay rum, cologne, the alcohol that is about pathological specimens in a museum. The attack lasts from one to two weeks, and is followed by depression. The onsets are irregular in occurrence, and between them the patient may be temperate or have even an extreme distaste for alcohol. This form of alcoholism is not infrequent among professional men, and it is extremely difficult to say how far the patient is responsible for his condition.

In considering these cases it is worth investigating whether or not a man who is a liquor dealer, but who never drinks alcoholic liquors, is not affected by the presence of volatilized alcohol. The fumes of wood alcohol are fatally poisonous, and Féré produced monsters in chickens by exposing the eggs to the fumes of alcohol. In Krauss's translation of Mendel's *Text-Book of Psychiatry* (p. 240) is the statement that "breathing alcohol fumes may cause delirium tremens, as well as the use of alcohol."

In judging a drunkard it must be remembered that in many forms of alcoholism, after the condition has been established, the patient has little more free-

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dom of will than a brute has. If he is accountable for the habit, he is blameable for the crime that follows. If he is not accountable, and it is often very difficult to prove that he is, he is to be treated as a blamelessly insane man. In proper surroundings, and with skillful direction, a child born with a tendency to dipsomania or other alcoholic neurosis, can be saved, but commonly the circumstances of such a child are bad. Alcohol should never be given to these children even as medicine or in medicine, and they must not be pushed in school to nervous exhaustion.

A confirmed alcoholic is to be prevented, if possible, from marriage. The first children of an alcoholic may be mentally sound; the younger children are more or less mentally weak; the youngest are not uncommonly imbeciles or idiots, or under shock they become insane. Fortunately many of the children of alcoholics die at an early age, and the family of a drunkard very seldom lasts beyond four generations. In the first generation moral depravity and alcoholic excess are found; in the second, chronic drunkenness and mania; in the third, melancholia, hypochondria, impulsive and homicidal ideas; in the fourth, idiocy, imbecility, and extinction of the family.

Alcoholism in the parents, especially drunkenness at the time of conception, is one of the chief causes of idiocy in children. Féré, as was said before, by injecting a few drops of alcohol beneath the shells of hens' eggs, or by exposing the eggs to the vapor of alcohol, could produce monsters almost invariably. In 1000 cases of idiocy at the Bicêtre, Bourneville found a history of alcoholism in 620, or 62 per cent. of the parents; in one-half of the remaining 38 per cent. no history at all was obtainable—probably many of these also had the alcoholic taint. Beech, in England, found in 430 idiots that 31.6 per cent. were children of alcoholics. In Normandy, Dahl obtained the same history in from 50 to 60 per cent. of the idiots he examined. In Norway, from 1825 to 1835, following the free distillation of brandy, drunkenness increased enormously, and simultaneously the number of idiots increased 150 per cent. About the same percentages hold for the relation between alcoholism and epilepsy.

The grades of imbecility cannot be clearly marked, but, roughly, they are three. The lowest grade of imbeciles understand simple commands, and have a slight manual dexterity. They express themselves by signs and in monosyllables. They cannot concentrate attention upon anything. Careful training can teach them to do rough menial work, but they are industrious only when watched. They are inclined to masturbation; they are quiet except when teased, and then they may be dangerous.

Imbeciles of the second grade can converse in a narrow vocabulary, and they commonly stammer. They can be taught to read monosyllables, and they show a certain shrewdness. They are irritable and quarrelsome, inclined to lying and stealing, and are devoid of shame. They will do no work constantly. They may have perverted sexual instincts and cause trouble therefrom. Their memories are defective, they are slow to understand, and they are always very vain.

The third class, the high grade imbecile, is the most important because he

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is commonly a criminal, and he is very frequently found in every town. His intellect is below the average, and his will is very flabby. He learns little at school, and what he does learn is acquired slowly. He rarely goes beyond simple addition in arithmetic. Sometimes he has a remarkable facility in getting a speaking knowledge of two or three languages, and he may learn a trade. There is a high grade imbecile that is cunning and shrewd, but he has no will, and he is a criminal. As imbeciles approach the normal in intellect they recede from it in abnormality of the will. There is an infantile development of the forebrain in all these cases.

Imprisonment does no good to imbeciles. Their condition is seldom, if ever, diagnosed when they are of the high grade, the most dangerous of all. Society is at war with these unfortunates from the cradle to the grave; it elevates the alcoholic parent socially and politically; weeps with him over the rascality of his sons; talks learnedly and pathetically upon the ingratitude of the modern child, quoting passages from *King Lear;* carries out the hideous farce to the final curtain, and keeps on inviting the father to other champagne suppers instead of castrating him. Here is an evil with which the world is rotten; it is everywhere and forever present, and the wise medical profession does not even know of its existence, or if it does, it spends itself on the determination of the opsonic index or in investigating the sleeping sickness in Timbuctoo, not that these are not good in themselves, but why feed us on cates to the suppression of bread and meat?

FOREIGN BODY IN THE IRIS.

By G. ORAM RING, A.M., M.D.,

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THE history here recorded is of more than usual interest.[1] A foreign body imbedded in the iris stroma remained hidden for three weeks, at which time it presented as a minute black speck on the surface of the iris.

A carefully executed radiograph failed to show the presence of a foreign body, this being the second case during the past year in my service in which a foreign body was recovered with absolute preservation of vision, in which the x-ray examination was negative.

The possible loss of the affected eye and the danger of sympathetic involvement of the fellow eye, justify a most extensive search, even though this usually positive diagnostic aid has pointed negatively. It must be remembered that if the fine edge of a minute piece of steel presents itself to the x-ray plate, it is possible that no impression may be made.

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1 Patient was exhibited before the Ophthalmic Section of the College of Physicians at the December meeting before the operation, and at the January meeting when the final result was accomplished.

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J. C., age 28, visited my service at the Episcopal Hospital during November, 1907, with the following history: Two weeks before, while cutting a steel wire cable, a minute sliver of steel flew into his right eye, having penetrated the cornea down and in, the point of entrance being indicated by a minute corneal cicatrix.

The iris was fairly dilated, the lens and capsule opposite the papillary area were transparent. Pronounced pericorneal injection was present, with lacrymation and moderate tenderness.

An x-ray was negative. One week later, when I saw the case for the first time in consultation, a minute black speck was seen in the iris down and in, which was regarded as the foreign body, it having buried itself in the iris tissue for about three weeks.

The character of the injury was explained carefully and the patient consented to enter the hospital for magnet operation just four weeks after the original accident.

After etherization the Sweet magnet was applied to the cornea opposite the position of the foreign body, and promptly drew the portion of the iris in which the foreign body was imbedded in a mass of exudate toward the cornea, but failed to dislodge it.

A small corneal section was made at the limbus down and in, and the magnet applied to the lips of the incision. The minute piece of steel failed to leave its exudative bed until a small area of iris presented itself through the wound.

It was thought wise, therefore, to make a small iris section. After the iridectomy had been made it was discovered that the foreign body had made a faint scar on the capsule.

The usual lotion was applied and atropine instilled. The healing process was comparatively prompt and entirely uneventful, and normal vision secured.

We have been using the magnet of Dr. Sweet for the past two years in our service, and during that period it has not failed to remove a single foreign body in any eyes that have been presented for treatment.

PRESENT STATUS OF THE OPSONIC THEORY AND BACTERIAL THERAPY.[1]

By NATHANIEL GILDERSLEEVE, M.D.,

Associate in Bacteriology, University of Pennsylvania, Philadelphia; Pathologist to Bar Harbor Medical and Surgical Hospital, Bar Harbor, Maine.

Inoculations with the causative agent of a disease were first employed as prophylactic measures. We find such inoculations employed, at a comparatively early date, as a prophylactic measure against small-pox, and first introduced into Europe in 1718. This was not the vaccination as practiced to-day, but inoculation with the virus from a case of small-pox to a healthy individual.

[1] Read before American Therapeutic Society, May, 1908.

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This inoculation usually caused a mild infection, which rendered the individual immune to the disease. The procedure was, however, not unattended with risk, virulent small-pox occasionally following vaccination. Jenner, in 1798, substituted the cow-pox virus for that of small-pox, and vaccination was practiced by inoculating healthy individuals from the pustules of those previously inoculated. These methods have been gradually perfected, along with other advances in scientific medicine, notably bacteriology, until vaccine is now obtained from calves and practically all undesirable features eliminated.

It is interesting to note that in spite of all the work done on small-pox, and the great success attending the use of vaccine, we cannot to-day state positively the cause of this disease.

Preventive inoculation against rabies, another infectious disease, the cause of which is still unknown, has been practiced successfully since the discoveries of Pasteur.

Inoculations of dead and attenuated bacteria, bacterial products, and extracts of the cells have gradually come into use for the prevention and cure of infectious diseases. These substances have been termed bacterial vaccines. The first to employ a bacterial vaccine was Toussaint who, in 1880, attempted to immunize animals against anthrax with the blood of infected animals containing the bacterium anthracis which had been heated for ten minutes to 55° C.; this procedure was not by any means always attended with success. Pasteur perfected the method by employing cultures attenuated by cultivating at 42° C., following this with the injection of a virulent culture ten to fourteen days later; these methods have been more or less successfully modified by other investigators.

The next bacterial product, the first to be employed in attempting to cure disease, to attract the attention of the medical profession, was Koch's tuberculin in 1891. This substance was eagerly grasped by the profession, employed indiscriminately by many who knew absolutely nothing regarding its nature and as to how it should be used, with the result that it rapidly fell into disrepute and was employed by but a few careful workers, who have gradually perfected it until we now have several preparations of tuberculin, some of which are valuable therapeutic and diagnostic agents; they should be employed with great caution and only in selected cases.

The so-called Haffkine's serum, a preparation of the bacillus pestes, and therefore a bacterial vaccine, has been employed to some extent as a prophylactic measure against bubonic plague, evidently with excellent results.

Following the adverse discussion on tuberculin, which extended over a number of years, the subject of bacterial vaccines remained in a comparatively quiescent state until Wright, in 1902, put before the scientific world the first of a series of articles on the use of bacterial vaccines, and advanced a new theory regarding immunity, namely, the opsonic theory. Wright's work was taken up by other investigators, and as a result of their combined efforts more light has been thrown upon the subject, and a number of new vaccines introduced.

The opsonins we define as substances in the tissues that have the property

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of acting upon the bacteria, preparing them for phagocytosis. Wright demonstrated, by means of the opsonic index, that in certain infections these substances were decreased in the tissues, and that they could be increased by inoculations of dead bacteria.

When we come to a consideration of the present status of opsonins and bacterial therapy, we approach a subject that has been, and still is, a subject of much controversy on the part of the medical profession. Some, very conservative, still control their inoculations by the opsonic index; others claim that the index is of little value, while still other physicians who have attempted to employ vaccines with little or no knowledge of the mechanisms involved in immunity, and the manner of employing these agents, condemn the use of bacterial vaccines; but I have yet to hear a man who has done enough careful work to qualify him as an authority, take this stand. Others say to us, "these vaccines may be of value, but I have not the time to take the index, isolate the bacteria, and prepare the vaccines; what good will they do me?"

I still control most of my inoculations with the opsonic index; it is time-consuming, tedious, exacting work, and if the time comes when I can conscientiously say that I do not consider it necessary, I shall drop it and approach the work with the idea of deriving some pleasure from it; now it is simply drudgery. There are physicians who, in the beginning, employed the index, and after considerable experience in the use of vaccines, have practically discontinued it, and are controlling their inoculations by clinical observations, combined with the knowledge of the sequence of events following the inoculation obtained by experience; they claim to be getting as good results as when the index was employed. Their opinion and experience demands recognition, but the man who approaches the subject with little or no knowledge of bacteriology, bacteriological and opsonic technique, and very little, if any, knowledge regarding the use of vaccines, is sure to condemn their use within a short time. There are no therapeutic agents whose use demands more care, and are to be employed more judiciously, than the bacterial vaccines.

The causative agent in an infection should always be determined before employing a vaccine; they should not, as I am sorry to say some have been, be used in a haphazard manner; it is very easy to assume that a condition is due to a certain organism, but such assumptions are very apt to be erroneous.

Regarding the exact nature of the opsonins we know but little. Some investigators have directed their energies toward the determination of their character; but, as is true of certain other immune bodies, their endeavors have been almost fruitless. We know that they are present normally in the tissues; decreased in certain infections; can be increased by immunization; they disappear quite rapidly from the serum on standing; they are thermo-labile being destroyed in fifteen minutes at 60° C.; they apparently act best in a neutral media; they are not, according to some investigators, dializable. In certain respects they resemble enzymes; in others they do not. In what part of the economy they are formed is at the present time purely a matter of speculation.

A great deal has been said regarding the specificity of the opsonins; there

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is, apparently, some degree of specificity in normal opsonins. This seems to exist to a greater extent in infected individuals, and following the use of vaccines and sera. We must acknowledge that investigations have so far thrown comparatively little light upon the question of specificity.

The theory that a pre-opsonin exists in the tissues has been advanced, but we have very little, if any, experimental evidence in confirmation, although it is a very plausible theory. There is some evidence to show that agents other than the bacteria will increase, to some extent, the opsonic content of the serum. Some claim that heat, massage, and Bier's hyperemic treatment will increase; this is, in all probability, a relative and not an absolute increase; in other words, the opsonic content of the serum is increased at the expense of the other tissues. Yeast and nuclein increase the opsonins.

In considering bacterial therapy so much has been said on the opsonins, that we hear the terms opsonic therapy applied to it almost exclusively; it must be remembered that bacterial inoculations increase other anti-bodies as well as the opsonins, the immunity following their use is composite rather than simply opsonic.

One point of extreme importance that has been the subject of much discussion is that of stock versus autogenous vaccines. I have watched carefully the results following the use of both stock and autogenous vaccines, and have come to the conclusion that autogenous vaccines are in the great majority of cases of much more value than stock. In some cases I have been unable to obtain any result with a stock vaccine, but as soon as an autogenous was employed there was a marked change in the patient's condition. I have, however, gotten better results with a polyvalent gonococcus vaccine than with a vaccine prepared from the organism obtained from the patient. It is manifestly extremely difficult and time-consuming to attempt to prepare an autogenous vaccine from a case of tuberculosis; in fact, by the time it could be prepared the need for it might be over, and we are justified in employing one or another of the tuberculins as made by the manufacturing biologists or in preparing a stock ourselves, making sure that we have a product that has been carefully prepared. Excluding tuberculin one should, as far as possible, prepare his own vaccines, and it is possible in the majority of cases.

Some of the manufacturers of biological products have placed the various bacterial vaccines on the market, selling them to the medical profession, placing them in the hands of, in many instances, men who have the courage of ignorance and will employ them in treating all sorts of cases for which they were never intended, and in the treatment of infections which they guess are due to certain organisms.

The subject is, in many respects, still in the experimental stage, and in my estimation the course of these manufacturers is absolutely unjustifiable. The time may come when certain of these substances may be marketed, but until we know more about the subject they should be withdrawn; understand I do not include a properly prepared tuberculin, but this should be in the hands of men skilled in its use. I may be severely criticized for the position assumed, but have considered the subject from all view points, even theirs, the commer-

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cial one, and consider my stand justified. Will summarize my reasons for assuming what many will consider an extremely radical position:—

1. The use of these substances is still, in many respects, in the experimental stage, and they should be solely in the hands of those who are making a careful study of the subject, familiar with laboratory manipulations and capable of isolating the organisms, preparing vaccine, and determining the opsonic index.

2. A great deal of damage may be done if they are placed in the hands of those incapable of properly controlling the inoculations and dosage. If placed on the market they will be employed by some in all sorts of cases, in many instances without determining the causative agent concerned in the infection, and taking the statements of the manufacturers as their guide to inoculations.

3. The question of stock versus autogenous vaccines is still debatable, with the evidence greatly in favor of the autogenous in most instances.

4. The question as to how long a vaccine retains its active properties has not been answered, neither have we any method of at all satisfactorily answering this question or of determining the potency of a vaccine.

Some manufacturers have taken the proper course, and will not market the vaccines.

What conditions are to be treated with vaccines? They have been tried in almost all bacterial diseases, the causative agent of which can be isolated; in many of these conditions they have, as one who is familiar with the subject of infection and immunity would expect, led to no beneficial results; in others the results have been detrimental, while in still others the results have been surprising, and by careful procedure and proper modification in the preparation and use of the vaccines we will, undoubtedly, be able to add to the list of conditions amenable to this treatment.

The vaccines are of most value in some acute and many chronic local infections. They have been employed in certain general infections with, in some cases, detrimental results; in others no benefit, and in still others results that, while apparently good when compared with another series of cases treated by other therapeutic measures, present nothing that we can claim is favorable to the vaccine treatment.

I have always hesitated to employ them in a general infection, and have seen no evidence to warrant a change of opinion.

If we go carefully over the reports on the treatment of acute erysipelas, we are compelled to conclude that the results are negative, which is what we might expect; they have been employed in the treatment of puerperal septicæmia with, so far as we can determine, no greater percentage of recoveries than in cases where they were not used. Vaccines have been employed by some in typhoid fever, but there is no evidence advanced to warrant their use; there is, however, undisputable evidence of the value of bacterial inoculations as a prophylactic measure against this disease.

Tuberculin is of undoubted value in the hands of competent men, not only as an aid to diagnosis, but as a therapeutic measure in the treatment of

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selected cases of tuberculosis; here one should proceed with extreme caution, and take no chances; irreparable damage can be done by improper use of tuberculin.

In localized staphylococcus infections the vaccine is of great value, excellent and surprising results following its use in sycosis vulgaris, furunculosis, carbuncles, periostitis, ostitis, and osteomyelitis, refractory cases of impetigo, and other conditions. In acne vulgaris vaccines must frequently be combined or followed by some other treatment. Staphylococcus joint infections and infections secondary to tubercular diseases, such as tubercular abscesses, bone and joint diseases, are markedly benefited by inoculations.

In staphylococcus endocarditis, pleuritis, endometritis, and peritonitis, the results, in some cases excellent, have not, on the whole, been so satisfactory. In general septicæmia and pyæmia the results are not especially encouraging.

Localized streptococcus infections, both primary and those secondary to tuberculosis, are markedly benefited or cured by a streptococcus vaccine.

In puerperal septicæmia the results do not warrant our making any statements. Cases of chronic eczema from which we can isolate the staphylococcus or streptococcus, frequently markedly improve under treatment with the appropriate vaccine.

Pneumococcus pleurisy, empyemia, as well as other localized pneumococcus infections, respond favorably to the use of vaccines. Attempts have been made to treat pneumonia with vaccines, but the results reported are far from conclusive.

Gonorrhœal infections, especially the subacute and chronic, notably gonorrhœal rheumatism, are influenced favorably by the use of gonococcus vaccines. Vaccines have been employed in gonorrhœal conjunctivitis, the results in cases reported are very favorable.

Vaccines have been employed in the treatment of catarrhal conditions of the nose and throat; the results are apparently favorable in the few cases reported, but much more work must be done before we can make any positive statements regarding their value in these conditions.

Lately some work has been done in the treatment of certain eye infections due to various organisms; the results are worthy of consideration.

Many cases of chronic otitis media are favorably influenced by, after isolating the infectious organism, employing the appropriate vaccine.

Infections caused by the bacillus coli and allied organisms yield, in many cases to autogenous vaccine; such conditions as cystitis, pyelonephritis, abscesses, etc.

Bacterial therapy is becoming of greater importance as our knowledge of the subject advances. Some investigators have been altogether too enthusiastic, but the majority have, however, settled down to look upon the vaccines as valuable therapeutic agents, but not as cure-alls; there is still much adverse criticism on the part of its opponents. We are, however, by using them with intelligence, gradually adding to the list of infections that can be benefited by the use of appropriate vaccines; those that do not respond so well as to other

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treatment, are being eliminated, and the treatment modified or supplemented as the condition demands and experience teaches is necessary.

The vaccines have come to stay, and we can only ask certain members of the profession to be patient and not condemn bacterial therapy because they cannot employ it, either through lack of knowledge or, as some say, time; not to employ it improperly, but leave it in the hands of those skilled in its use until the time comes, and we sincerely hope it will be soon, when definite rules can be laid down for the use of vaccines, so that the practitioner can control the inoculations by clinical manifestations; but even though some rules can be advanced, the ideal condition can only present when the practitioner adds to his diagnostic armamenture sufficient bacteriological apparatus to enable him to determine the causative factor in the different infections.

Editorial

RECENT ADVANCES REGARDING HYSTERIA IN RELATION TO TRAUMATIC NEUROSIS.

THE medical profession has often been reproached for its incompetence in the face of certain long-standing nervous affections of which the functional nature is later proved by a cure through Christian Science, Mental Healing, and other faith cures. Sometimes the psychic element in the recovery is not so clear as when it is disguised in such procedures as cheiropraxy, osteopathy, homeopathy, or even in some cases electrotherapy when indiscriminately applied. Any of these means, just as surely as drugs, may affect a symptomatic cure merely through the suggestion they convey. In this respect it is to be regretted that the procedure of too many practitioners is defective; for many, who should better merit the name doctor, when uncertain or vague in their diagnosis, will run the gamut of their armamentarium on the chance of a lucky hit. Even the therapeutic blunderbuss is by no means extinct.

There was formerly some justification for this demerit; but nowadays precision in neurological diagnosis has removed all excuse. Even though the general practitioner himself has not become versed in the clinical technique for investigating the nervous system, yet it is not difficult to find a competent neurologist who can in most cases distinguish with certainty symptoms arising from organic defect from those arising in an idea, emotion or defect of will.

No longer need we rely upon the method of exclusion for diagnosing psychic disorder. The signs by which we distinguish psychic symptoms are as positive, clear, and demonstrable as any other reaction observed at the bedside. For instance, a blush induced by a suggestion by the investigator is as much an observable, unmistakable, pathognomonic reaction as is the more simple extensor reaction of the great toe, when the sole of the foot is lightly stroked in a patient having a disorder of the motor projection fibers in the pyramidal tract or elsewhere in their course.

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The tests we employ for the estimation of attention, perception, memory, association of ideas, fatiguability differ not in kind, but only in complexity from those employed in the mensuration of motility and sensibility, including the function of the special senses, the validity of which is disputed by no one. Even the emotions are now being studied by an exceedingly delicate galvanometric method devised by Jung in Switzerland, and now being used in this country by Petersen, among others.

We are not yet in a position to measure the very complex reaction known as suggestibility; but it would be as absurd on this ground to forbid us to ascertain it clinically as would be the prohibition of cardiac murmurs as physical signs unless we measured their sonority instrumentally. Just as skill in an appreciation of cardiac murmurs requires a long apprenticeship in auscultation, much more does the technique for the elicitation of suggestibility require training and experience.

Space does not permit a doctrinal discussion of the relation of suggestibility to hysteria; for this the reader is referred to an article of the writer in the current *International Clinics*, to the often expressed views of Babinski, and to the recent discussion upon hysteria at the Paris Neurological Society. The conclusions which emerge from this study and the intelligent observation of patients may be expressed as follows:—

1. That all the symptoms which may legitimately be included under hysteria are imposed by suggestion.

2. That the state of suggestibility derives from:—

(a) Faulty education, tending to perpetuate and fortify the natural suggestibility of the child.

(b) Cerebral modifications due to organic causes, the action of which necessarily varies among individuals in accordance with

(c) The hereditary constitution.

3. Those symptoms which do not derive from this process do not properly belong to hysteria, but originate from causes which former observers had not ascertained.

4. The success of the treatment as judged by the permanance of its results strongly corroborates this view of the pathogenesis of hysteria.

The outstanding corollary of these doctrines is the tremendous power of the medical attendant to impose, or not, upon his patient an idea which may create such a derivative of the imagination as a syphilophobia, astasia-abasia, a paralysis or weakness of an extremity, or any of the numerous imaginary diseases suggested by medical men by injudicious questioning or advice. I need not here discuss the deliberate venality which arouses fear for its own profit, for that fear is often allayed by the ingenuity by which it has been incited. I speak only of the blunderer in whose mind the idea of organic disease permeates his conduct so as to alarm the patient.

A false and exaggerated optimism is in this respect as fertile in unfortunate suggestions as in the preceding method, for the patient quickly perceives the insincerity of his attendant's remarks. Both attitudes arise from the want of precision in methods and consequent uncertainty of diagnosis.

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To the doctor's temporizing thus engendered, we must attribute the birth of evolution of the so-called traumatic neurosis. Now, pathology has taught us that spinal and cerebral commotion cannot give rise to symptoms of the character and duration complained of by the victims of railway spine, and that hæmatomyelia is a very different clinical picture. Chemistry has taught us that no constant change occurs in the secretions of these patients. From biology we learn that other organisms suffer from just such disabilities independent of trauma, and from ethnology that other races and peoples show a similar syndrome, though the thought of a railway train has never entered their heads. Psychology has taught us that such symptoms can arise purely from an idea and can be removed by another idea.

We cannot then attribute this disease to trauma as such, but must do so to the expectation of medical men of the last generation that such a condition was biologically present, and to the consequent present belief in its existence by the laity, who are always laggards in science.

This popular belief is prevented from dying by the few medical men who still foster the doctrine that trauma can itself produce the neurosis in question. Whether it is done through respect for authority, by following the fashion, on account of want of information, or by reason of venality, the effect on the public mind is like; and it is high time that we, as a profession, orientated ourselves as regards hysteria in a fashion at once precise and comprehensible, so that an end may be put to the scandal of permitting a premium to be placed through our fault upon want of hardiness, lack of self-respect, forgetfulness of obligations, even when simulation, unconscious or deliberate, is not in question.

T. A. Williams, M.B., C.M. (Edin.).

Cyclopædia of Current Literature

APPENDICITIS IN CHILDREN, ACUTE.

Acute appendicitis is rare in infancy but is more common in childhood than is generally supposed. An early diagnosis is difficult and the first stages and lighter forms of the attack may be easily overlooked. The prognosis of the disease is more rapid in children than in adults; the involvement of the peritoneum and the appearance of pus are early features; diffuse peritonitis is probably more frequent but there is still greater tendency to the formation of a localized abscess.

A child is never so young and seldom so sick as to contraindicate surgical interference, but the extent of the operation must always be measured by the condition of each patient. Children stand short operations well but may be needlessly lost through prolonged and ill-advised efforts to do more than is absolutely essential. The prognosis is more uncertain in children than in adults. Age is a very important factor. In children over ten years of age the prognosis is at least as good as in adults; in children under five years it is worse, and in infants the prognosis is exceedingly grave. Beth Vincent (Boston

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Medical and Surgical Journal, October 1, 1908).

APPENDICITIS, PROPHYLAXIS OF.

More attention should be paid to vegetables in the diet, thorough mastication, more frequent rather than heavy meals, and faultless digestion. The digestive functions must be kept in good order by physical measures, such as massage and electricity, or with bitters, and physical exercise must not be neglected. Bacterial influences must be combated by care of the teeth and the mouth. This is especially necessary in infectious diseases, especially those with localization in the mouth and nose. It is especially important here that the bowels should be kept well open, if necessary with calomel, to which the writer attributes a disinfecting action. He thinks hygiene along these lines might restrict the frequency not only of appendicitis, but of the metabolic affections as well. K. Witthauer (Therapeutische Monatshefte, Sept., 1908; Journal American Medical Association, October 17, 1908).

CARCINOMA OF THE BODY OF THE UTERUS, PRIMARY.

An early diagnosis is not made from any symptom coming from the malignant area, but rather from the sudden hæmorrhage through the perforation. Metastasis does not occur so frequently from the carcinoma of the fundus uteri as from the cervix. As proved by the cases reported, malignant growths of the body of the uterus are of much slower growth and have much less pronounced symptoms than those of the cervix. The diagnosis of early malignancy in the fundus uteri may be prevented because of the want of symptoms. Having made an early diagnosis, it is possible, by complete extirpation of the uterus and adnexia, to promise a very favorable prognosis. C. N. Ballard (Surgery, Gynæcology and Obstetrics, October, 1908).

CARCINOMA OF THE CORPUS UTERI, RELATION OF, TO FIBROIDS.

There is a distinct relationship between carcinoma of the corpus uteri and fibromyomata, and this relationship probably lies in certain common etiological conditions. The predisposition of fibroids to become complicated with cancer does not constitute an indication for their routine removal as soon as discovered, providing the patient can be kept under close observation, but any marked increase in the loss of blood from a fibroid, or the appearance of any vaginal discharge in the intervals between the hæmorrhages should be regarded as suggestive of the development of carcinoma. In a fibroid where either of these symptoms is present an immediate curettage should be performed in order that the condition of the endometrium may be examined, even if a radical operation has been decided upon. Every uterus removed for fibroids should be immediately opened by an assistant and the endometrium inspected to guard against possible oversight of a malignant process. In all cases of fibroids complicated by adenocarcinoma of the corpus a complete removal of the uterus including the cervix is the operation of choice. J. T. Williams (Boston Medical and Surgical Journal, October 8, 1908).

CEREBELLAR DIAGNOSTIC SYMPTOM.

Attention is called by the writer to a special symptom observed by him in six cases of cerebellar tumor. Four of the cases came to autopsy which verified the

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diagnosis. In the other two purely clinical cases the symptoms were typical. The phenomenon in question is the forced deviation of the head to the side opposite the lesion, together with great increase of vertigo and headache when the head is turned forcibly to the other side. The writer considers the phenomenon of diagnostic value. It does not occur always at the same period of the disease, a fact that is not explainable any more than the appearance of the symptom itself. A. Gordon (Journal American Medical Association, August 8, 1908).

DERMATITIS EXFOLIATIVA, QUININ IN.

Six cases of dermatitis exfoliativa are reported by the writer. In all the cases embodied in the report the drug was given in large doses, and the tolerance in all of them was very striking. The urine was examined, and no untoward indications, such as hæmaturia or albuminuria, were observed, even when the dose ran as high as in the third case (pityriasis ruba), in which from 80 to 85 grains were given during a period of twelve hours. In these cases no attention was paid to slight deafness, and the dose was reduced only when the tinnitus aurium was pronounced. The effect in all cases was noticed in a few days, and it would be difficult to explain such rapid subsidence, and œdema, when present. The slight relapse of the skin condition in the third patient when the dose was reduced from 60 to 20 grains a day, and the rapid improvement following an increase in the dose, was significant of the fact that results could only be obtained with large doses. W. H. Mook (Journal of Cutaneous Diseases, September, 1908).

EXOPHTHALMIC GOITER, LECITHIN IN.

For the past three years the writer has used an alcoholic solution of lecithin, with excellent results in many cases of asthenia (not psychasthenia) and much more recently has extended its service to a few cases of exophthalmic goiter with strikingly favorable effect. Notwithstanding the nauseous and disagreeable odor of the solution, the patients cling to it until the nervous symptoms are allayed. All these patients placed on it, state that an hour after the medicine is taken, "the nerves" are quieted and there is a cessation of acute symptoms. The author tried it for alternate weeks with glycerophosphates, quinin, and gentian, and the patients lost weight, with increase of nervous phenomena on the glycerophosphates, and gained weight, with abatement of nervous symptoms, on the lecithin. Lecithin is out of place with disturbed digestion, and it fails without the assistance of a milk diet. A further trial is suggested of the combination of lecithin and milk, to contract the disordered forces of the thyroid. H. J. Berkley (Bulletin of the Johns Hopkins Hospital, September, 1908).

EXOPHTHALMIC GOITER: PATHOLOGY AND TREATMENT.

Sixteen cases are summarized by the writer, who describes the cell changes which take place in the thyroid body and believes that its enlargement is a true hypertrophy from which results an increase of the specific secretion. To support this view he evidences the fact that the manifestations of exophthalmic goiter are the exact opposite to those of myxoedema, which disease is undoubtedly due to a deficiency of thyroid secretion (athyroidism). The low ebb

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of metabolism in myxœdema is clearly indicated by the infrequent low tension pulse, feeble cardiac action, mental and physical lebetude, subnormal temperature, dry swollen skin, constipation, diminution of the excretion of urea, and increase in body weight. Whereas excessive metabolism is shown in exophthalmic goiter by the frequent raised tension pulse, accentuated action of heart, mental and physical condition active and alert, temperature inclined to be raised, moist skin, looseness of the bowels, increased excretion of urea, and loss of body weight. There is no doubt that thyroid secretion is capable of causing intoxication. Assuming then, that the hypothesis that exophthalmic goiter is due to intoxication from hypersecretion of the thyroid gland is correct, the writer states that there is still no satisfactory explanation of the cause of the hyperactivity of the thyroid. It has been suggested that it is due to degenerative changes in the cervical sympathetic, or hyperplasia following an intestinal intoxication, but the intimate relation which exists between the thyroid and the generative organs—the gland often swells at the menstrual period, involutes or atrophies at the menopause causing myxœdema, hypertrophies at puberty or during pregnancy causing exophthalmic goiter (this is illustrated in three of the writer's cases), inclines him strongly to the view that some abnormality in the function of the generative organs may be the starting point of the thyroid derangement.

For medical treatment the author knows of nothing better than the antithyroid preparations. He advocates the use of rodagen in dram doses four times daily. It is expensive, however, and thyroidotoxin will doubtless give equally good results. Surgery appears to the author to be a logical and scientific method of treatment except that we cannot be certain that compensatory hypertrophy will not take place in the portion of the gland left behind. A. G. Gullan (Lancet, September 5, 1908).

MYASTHENIA.

Myasthenia is characterized clinically by fatigue and exhaustion of the voluntary muscles, chemically by an insufficiency of oxygenation, shown especially in the voluntary movements, and consequently the appearance of intermediary products, the destruction of the chemical composition of the muscle, and the augmentation of the total azote in the urine; pathologically by changes in the striated muscles and in many of the glands with internal secretions, such as the parathyroid glands, the liver, the suprarenal capsules, and the hypophysis. The latter and perhaps the parathyroid glands present microscopically the picture of glands in hyperfunction. As regards the *primum movens* of the disease, this seems to reside in a perturbation of the formation of the anti-body of fatigue, or of the oxydases. G. Marinesco (Semaine Médicale, September 2, 1908; New York Medical Journal, October 10, 1908).

NEURASTHENIA AND HYSTERIA, PSYCHOLOGY OF.

The author regards the psychologic distinction between neurasthenia and hysteria as profound. In neurasthenia there is an exhaustion or poisoning of the higher cerebral or spinal nerve centers. In hysteria there is no question of exhaustion, but there is aberration and morbid action of that part of the unconscious mind (vis medicatrix Naturæ) which presides over the functions and nutrition of the body, and which produces in hysteria, unconsciously and against the patient's will, morbid phenomena which the mind consciously is

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wholly unable to produce, even if it wishes—such as, for instance, reversed peristalsis, high temperature, local tumors, etc. Hysteria is thus parallel to insanity though quite distinct from it, the radical difference being that the sphere of the former is the unconscious mind and that of the latter the conscious mind. A. T. Schofield (British Medical Journal, September 19, 1908).

OVERWEIGHT AND UNDERWEIGHT.

The writer discusses overweight and underweight in relation to vitality, the causes of death in these cases, and the differences between the effect of overweight and of underweight. The effect of overweight is influenced by two fundamental factors: 1, the percentage of overweight; 2, age of the individual. The mortality increases markedly as the weight rises above 20 per cent. in excess, and to a still greater degree when the weight passes 30 per cent. in excess. This holds true for all types and all ages above 30 years. Beyond this period the mortality of overweight rises rapidly with the age and with the weight. In women the standard must be made a little higher than that of men, but with this allowance the effect of overweight among women is found to be just as bad as among men. As to underweight the effect is slight when the weight is not more than 20 per cent. below standard. The association of dyspepsia with underweight is a serious matter with those below 25 years of age, and has long been recognized as serious with a tuberculous family history especially in the younger individuals. In women an allowance has also to be made as in overweight.

As to the causes of death of those suffering from overweight and underweight, the writer states that overweights suffer more than underweights in the class of acute general diseases. Overweight seems to secure a marked degree of immunity from tuberculosis. Organic diseases of the heart show a decided excess among overweights and as great a deficiency among underweights. Diabetics are scarce among underweights, but numerous among overweights. Pneumonia is almost twice as fatal among underweights as among overweights. Bright's disease, both acute and chronic, is nearly twice as prevalent among overweights as in general experience. No overweight, whether man or woman, died of old age or senility according to the author's experience. He is convinced that the same percentage of overweights is more serious than if it were underweights, but in those below 25 years a moderate degree of overweight is more favorable than an underweight. The conditions are reversed above 30 years of age. B. Symonds (Medical Record, September 5, 1908).

PULMONARY TUBERCULOSIS, RELATIVE AND ABSOLUTE SIGNS OF.

Most of our useful information comes from symptoms, past and present, such as a history of presence of cough over any protracted period. The examination of sputum for diagnosis is considered by the writer to be of little value, and he would consider it only after more important questions are answered. Frequent recurrent colds are always suspicious, and especially so with a slight cough at intervals. So-called idiopathic pleurisy is considered by the writer as tuberculosis, and he would regard it as belonging among the absolute signs. Loss of weight is of importance, if noted, but its absence does not exclude tuberculosis. Loss of

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appetite and impaired digestion may be early subjective symptoms. Fever is usually present, but is most easily overlooked. The pulse of early tuberculosis may be rapid, and is generally of somewhat lower tension than normal. Hæmoptysis is generally due to tuberculosis; it may be early or late. Night sweats are not considered of much importance by the writer in early diagnosis. Dyspnœa is not a symptom of early tuberculosis in the majority of cases. Pain in the chest may be observed early or may be absent throughout. The history and symptoms and the physical signs when considered separately are relative, but when considered together, in most cases become absolute. The average man in practice knows too little of the subject of tuberculin. Inspection many times gives decided information, but as a rule little of value is derived from inspection of the chest in the incipient case. Percussion is of greater value to the expert than to the general practitioner. Ausculation is of greatest importance in recognition of physical signs. Palpation and mensuration seldom give important data.

In many cases incipient tuberculosis exists with no physical signs, but the author thinks that the failure to recognize the disease early is, as a rule, due to inability to recognize the physical signs when they do exist. Emphasis is laid on the scarcity and unimportance of the absolute signs, and the many relative signs, which, with the increasing importance given to this disease, are rapidly becoming absolute as a symptom-complex. E. G. Whipple (Albany Medical Annals, September, 1908).

RECTUM, CANCER OF THE.

Extirpation is considered by the author to be the only method that affords any hope of life or prolonged comfort to sufferers from cancer of the sigmoid and rectum. Periodical, systematic, and thorough local examination of the rectum in all cases afflicted with irregular intestinal action, or symptoms pointing to disorders of the alimentary tract, is the only safeguard against these growths attaining an inoperable state before discovery. The only absolute contraindications to removal are immobility and involvement of the liver. The operation of amputation, by the perineal route, is feasible in nearly all cases of rectal cancer, and should be the operation of choice whenever the combined or abdominal operations are not necessary. The operations on early recurrences are not usually successful. Old age, with good physical condition, offers exceptionally good prognosis in these cases, and, contrary to expectation, the very young may be cured of the disease. J. P. Tuttle (New York Medical Journal, September 26, 1908).

SCARLET FEVER, TREATMENT OF.

The writer warns against allowing the child to become chilled. He never exposes the child much for examination, and forbids general baths. After expectant treatment in the first stage he allows the second or third day, tea diluted with milk, lemonade or water, but nothing else until the appetite returns as the acute toxic symptoms subside. He says that the diet is of more importance in scarlet fever than in any other infectious disease, on account of the tendency to nephritis. It is important to avoid eggs, meat and soup, avoiding even dishes containing eggs. He insists on keeping the child in bed for five or six weeks, as nephritis is liable to develop in the fourth or fifth

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week. In an experience of 150 scarlet fever patients treated on these principles—avoidance of baths and cold packs and of meat, soup and eggs—he has never had scarlatinal nephritis develop in any instance. K. Oppenheimer (Münchener medizinische Wochenschrift, August 11, 1908; Journal American Medical Association, September 19, 1908).

Book Reviews

GYNECOLOGY AND ABDOMINAL SURGERY. In Two Large Octavos. Edited by Howard A. Kelly, M.D., Professor of Gynecologic Surgery at Johns Hopkins University; and Charles P. Noble, M.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Vol. II. Large Octavo Volume of 862 Pages, with 475 Original Illustrations by Mr. Hermann Becker and Mr. Max Brödel. Philadelphia and London: W. B. Saunders Company, 1908. Per volume: Cloth, $8.00 net; Half-morocco, $9.50 net.

In reviewing the second volume of this admirable work on gynecology and abdominal surgery, which was written, as was the first, by men recognized as leading authorities in their respective departments, and edited by two who enjoy enviable reputations in their speciality, the same high standard that characterized the preceding volume is maintained. The opening chapter is that of "Complications Following Operations," which subject is carefully and systematically treated. Many points which are of decided diagnostic value are clearly pointed out. A few medical conditions, such as malaria and typhoid fever, are discussed in their relation to gynecological operations and their affect upon the ultimate recovery of the patient.

In the following chapter, which is devoted to "Cesarean Section," a brief historical sketch of this operation precedes the consideration of its actual performance. The indications for such surgical interference and the technic are then discussed in detail. Further on, the various operations during pregnancy are outlined, as the necessity for their performance is not infrequently the source of considerable anxiety, especially when such a serious condition as appendicitis develops. The results of these operations within this period of antiseptic surgery have had a tendency to convince many obstetricians that conservatism often means prompt surgical interference, since, thereby, dangerous complications may safely be removed and maternal and fœtal life be saved.

In the chapter on "Extra-uterine Pregnancy" the various phases of this grave condition are carefully considered and are augmented by six pages of references to the most important literature on the subject.

The section on "Diseases of the Female Breast" is especially worthy of mention. It is profuse in elaborate and instructive illustrations, which show the different pathological conditions microscopically as well as grossly, thereby adding much to the clear conception of the text. With many half-page illustrations the various steps in the performance of the operation for the removal of the diseased breast are clearly shown. This appears to be one of the most important chapters of the book and covers nearly one hundred pages. Considerable space is also given to the discussion of the "Surgery of the Pancreas," which gland has until recently been lost in the depths of obscurity, but, since the institution of antiseptic surgery, it has become one of the most important organs of the body.

The operative treatment of sepsis in the child-bearing period, operations upon the gall-bladder, bile-ducts and liver, those upon the gastro-intestinal tract—including appendectomy, herniotomy—and surgery of the kidney have received ample attention. The text, besides being clear and comprehensive, is extensively illustrated with many drawings by such well-known artists as Herman Becker and Max Brödel. The mere mention of the names of the editors of this work should commend it to many.—R. B. S.

THERAPEUTICS: ITS PRINCIPLES AND PRACTICE. By Horatio C. Wood, M.D., LL.D. Thoroughly Revised and Rewritten by Horatio C. Wood, Jr., M.D. Fourteenth Edition. Philadelphia and London: J. B. Lippincott Company. 778 pages, Cloth, $5.00 net.

The appearance of another edition within two years shows the extraordinary favor with which "Wood's Therapeutics" has been received by the medical profession. This fourteenth edition presents more extensive alterations than in any previous revision; the book is now of service as a student's text-book. We all remember our efforts in student days to find what we wanted in the editions we had then. In this new one the fundamental facts are grouped together and printed in large type. A number of chapters have been rewritten, new illustrations have been inserted, and chapters on the opsonic therapy and the ion theory have been added. The entire book is abreast of recent discoveries and is a valuable work of reference for the scientist and practitioner. Of special service are the bibliographic references at the end of the chapter and the index of diseases as well as the general index.

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Address

AN ADDRESS DELIVERED BEFORE THE GRADUATING CLASS OF THE TRAINING SCHOOL FOR NURSES OF THE STATE HOSPITAL FOR THE INSANE, AT WARREN, PA.

BY FRANK WOODBURY, M.D.,
Secretary to the Committee on Lunacy of the State Board of Public Charities of Pennsylvania.

MEMBERS OF THE GRADUATING CLASS OF THE TRAINING SCHOOL FOR NURSES OF THE WARREN STATE HOSPITAL FOR THE INSANE: I feel honored by being invited by the authorities of this institution to act as their mouth piece on this significant occasion, and express to you their gratification upon the successful completion of your course of tuition, and your entrance upon your professional career.

I have also the honor to be the spokesman of this distinguished assembly who, by gracing this occasion with their presence, manifest their sympathy and good will, and cheer you by their applause.

I have to-night the especial honor of speaking for the Committee on Lunacy of the Board of Public Charities of Pennsylvania, which takes this opportunity of tendering to you its cordial congratulations, with the assurance of its sincere hopes for your success in your chosen vocation.

For a quarter of a century the Committee on Lunacy has consistently and persistently labored to advance the interests of the mentally afflicted, and especially the indigent insane—the most unfortunate and most dependent class of the community, a class which powerfully appeals to the sympathy of every reflecting, right-minded man or woman.

The committee soon discovered that no real improvement in conditions could be made, no real advance in the treatment of the insane attained, until

[1] Delivered at Warren, September 17, 1908.

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a better class of attendance could be secured. We can all rejoice in the knowledge that the old abuses, which existed in the past, are now obsolete, and that the brutal, ignorant, madhouse keeper has been superseded by the intelligent, the conscientious, the experienced attendant; in a word, the ideal trained nurse.

I am glad to recall the fact to-night that the Committee on Lunacy has for many years encouraged the establishment of training schools in all the large hospitals in the state; this has been done with the view ultimately of making the rule uniform that no attendant shall be employed unless actually a pupil, or a graduate, of such a training school as this excellent one at Warren, which is of state-wide influence and of almost national reputation. Its diploma is respected all over the world.

A short time ago, at the close of an exciting day, at the national nominating convention, a wireless message was sent from Philadelphia to Cincinnati to Mr. William H. Taft, notifying him of, and congratulating him upon, his nomination as the standard bearer of the great Republican party. He was the first presidential nominee who was thus notified by the powers of the air. Science has at length conquered another element, and we wonderingly acknowledge that the ambient ether above us is now quick with intelligence. Like the felicity of a jest, however, such messages are appreciable only by those who have ears to hear, or who are properly equipped with a receiving station to interpret them.

Let me assume this part for this occasion, and in similar manner be the bearer to each of you individually of a telepathic message from a distant home where loved ones are congregated to-night, happy in your success, and sending wireless messages to you, filled with words of encouragement and bidding you Godspeed in your profession.

I have referred more than once to your profession. I claim that in your capacity of caring for the sick you are acting as members of the great profession of medicine. You are, in fact, specialists of the medical profession and coadjutors of the attending physician. The services which you render to the humbler class of society are in like manner, as every one knows, performed by physicians of distinction when the patient belongs to royalty. You all remember the story of the insane king, Ludwig II, of Bavaria, and his tragic death, with his attendant, the court physician, a distinguished alienist, who perished apparently in an effort to save his patient.

Alienists are rarely employed in this capacity as personal attendants in this country, possibly a deterrent influence is exerted by their too generous estimates of the value of their services. If the bills rendered by the specialists in the Thaw case may be taken as a guide, for instance, it is easily understood why a family of moderate means would naturally seek your assistance in preference to theirs.

Some years ago it was remarked by an English philosopher, I think by Thomas Carlyle, that mankind for nineteen centuries had been trying to show the command "Know Thyself," but, discovering that this task was impossible, had finally settled down to the possible task of "Knowing your work and doing it."

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You have chosen for your life work the care of the insane—a noble and consecrated vocation. I shall not now stop to eulogize your mission. Let us briefly, however, consider your work—the subject of insanity. Let me attempt to try to set the subject before you, if possible, in a somewhat different light from any in which it has been hitherto presented before you.

I do not now speak of cases of mere weakness of mind, states of idiocy, imbecility, mental exhaustion, or dementia, which may be regarded as quantitative intellectual change; but only of insanity with delusions, mania, melancholia (maniac depressive state), and paresis. I can best illustrate my meaning by recalling to your minds the early childhood teaching of the five senses—sight, smell, taste, hearing, and general sensation or touch. These are all mental endowments, depending upon special organs for their physiologic performance of function. Let us imagine a sixth sense, which we may call comprehensively "the sense of propriety," or the sense of proper relation of things in general. Just as the other senses must be trained and educated, so this sense in civilized life must be cultivated and adjusted to surroundings. On the other hand, just as some individuals are born entirely or partially blind or deaf, or may be made so by disease, so the sense of propriety may be entirely absent (so-called moral insanity), or it may be deficient in various degrees. This may occur either congenitally, or from changes in the brain cortex, which may be assumed to be the organ of this special sense. In common speech this sense of propriety is frequently referred to simply as sense; thus we speak of an intelligent or sane person as "a man of excellent sense," or of an ignorant person, a boor or a fool, as "a person of no sense." It is often spoken of merely as common sense, the absence of which suggests insanity.

This naturally leads to the important subject of the causes of a temporary disturbance of the sense of propriety, or of the proper relations of things, and the delusions growing out of such misconceptions. In recent times it has been discovered that generally speaking, insanity is primarily not a brain disease, but a blood disease. It is the kind of blood which circulates in the arteries of the cortex cerebri, which determines rational or irrational thinking, sanity or insanity, and not physical changes in the nerve structure as formerly taught, although these may occur secondarily from disturbed nutrition. These latter changes—atrophy and the like—determine failure of memory, dementia and paralysis, but not acute delusional conditions.

This modern view of insanity is very encouraging, and leads to the hope that more cures may be obtained as we become better acquainted with the blood conditions which produce these manifestations. Medical Science, therefore, does not stand dismayed in the presence of a mind diseased, nor shall we follow Macbeth's advice to throw physic to the dogs—knowing as we do that the Anti-Vivisection Society and the W. B. of the P. C. A. of Pennsylvania, are likely to seriously object to such a course, and hold us accountable for the results to the dogs.

I find that my time has expired and I have not given you any good advice. I know that you will the more readily forgive the omission, as you have had plenty of it and to spare during the past two years of your novitiate. I will

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say this, however, that your first duty to your patients will be to keep yourselves well, so as to enable you to render them the most efficient service. I do not give you the advice that Sir Henry Holland did to the members of the medical profession, as I fear that it could not be conveniently followed. He declared that every physician should take at least three months' vacation every year in order that he might be able to do his best work during the remainder of the year. I do earnestly recommend, however, that you shall take an occasional holiday when you can cultivate the holiday spirit and for the time throw dull care away. Saleeby, who has recently written a work entitled "Worry, the Disease of the Age," insists that the worried mind is a diseased mind and needs medical treatment, rest, and recreation. When you become tired, tormented by cares and discouraged, go on a botanical excursion, go fishing, or take any excuse to get back to nature, which Hippocrates declared to be "the great physician of disease." "To him who in the love of nature holds communion with her visible forms, she speaks a varied language."

This has been interpreted very happily in these beautiful lines:—

The murmur of a waterfall
A mile away,
The rustle when a robin lights
Upon a spray,
The lapping of a lowland stream
On dipping boughs,
The sounds of grazing from a herd
Of gentle cows,
The echo from a wooded hill,
Of cuckoo's call,
The quiver through the meadow grass
At evening fall—
Too subtle are these harmonies
For pen or rule,
Such music is not understood
By any school;
But, when the brain is overwrought,
It hath a spell,
Beyond all human skill and power,
To make it well.

Let me express the hope that some of you may continue your medical studies and become fully qualified physicians. For your encouragement, I will inform you that the Committee on Lunacy, at its meeting on the 8th of this month, adopted a resolution recommending the trustees of State Hospitals of Pennsylvania to take internes for special instruction in the care of the insane. This is done with the view of obtaining a supply of properly qualified physicians as assistants, and especially in order that female patients may be attended by physicians of their own sex. It may also encourage you to know that Dr. Beates, of the State Board of Examiners, in his report to the State Medical Society, only the other day, stated that all the applicants from the Women's Medical College, of Philadelphia, had passed the State examination, and that their averages were higher than those of the men.

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I have declared that you are now an integral part of the great medical profession. It will not be inappropriate for me to conclude these remarks with a wireless message from the illustrious Sydenham, who was called the English Hippocrates. He died in 1689. Just as the light from a distant star may guide us at night, although it has required several thousand years to become visible, so the illuminating force of these words is not impaired by descending through more than two centuries to admonish you to-night: "He who giveth himself to the study and work of medicine ought seriously to ponder these four things, first, that he must, one day, give an account to the Supreme Judge of the lives of the sick committed to his care; secondly, that whatsoever of art or of science he has by the divine goodness attained, is to be directed mainly to the glory of the Almighty and the safety of mankind; moreover, thirdly, that he has undertaken the charge of no mean or ignoble creature, and that in order to his appreciating the true worth of the human race, he should not forget that the only begotten son of God became a man, and thus far ennobled by his own dignity, the nature he assumed; and, lastly, that he is himself not exempted from the common lot, and is liable and exposed to the same laws of mortality, the same miseries and pains, as are all the rest; so he may endeavor the more diligently, and with a more tender affection, as being himself a fellow-sufferer, to help them who are sick." To which Dr. John Brown, of blessed memory, the author of "Rab and His Friends," adds "for to take a higher, the highest, example, we must be touched with a feeling of the infirmities of our patients, else all our skill and knowledge will go but half-way to relieve or cure."

Clinical Lectures

ACNE ROSACEA AND PSORIASIS.[1]

By JOHN V. SHOEMAKER, M.D., LL.D.,
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GENTLEMEN: Here is a woman suffering from a typical disease. Mrs. E. B., age 32 years, complains of marked itching and a sensation of warmth on her face involving the nose, cheeks, and chin. She states that it began at first nine months ago as a small, red spot on the left cheek. Gradually this red spot spread over the cheek and soon the right cheek was similarly affected. The nose was next involved, and now the entire face is in a stage of inflammatory process. The condition is much aggravated when her face is exposed to the hot stove while she is cooking, and when she is out on a cold, windy day. When her face has been exposed to the cold wind it assumes a livid tint.

[1] Delivered in the Clinical Amphitheatre Medico-Chirurgical Hospital.

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Over the cheeks and chin are found small papules, dark-red in color, while over the alæ of the nose the blood-vessels are prominent and dilated. She suffers comparatively little inconvenience, except intense itching and a burning sensation, already mentioned.

Diagnosis.—The condition present in this young woman, as in all other similar cases, can be diagnosed readily from the history, the course and onset of the disease. It is undoubtedly a case of acne rosacea which, by its macroscopic appearance as present in this patient, might be mistaken for acne. Rosacea also often resembles syphilis, erythematous lupus, and frost-bite. For your convenience we have placed on the blackboard tables differentiating these diseases from rosacea.

Rosacea.	*Acne.*
1. The affected skin is more vascular.	1. The affected skin is more erythematous.
2. The skin is hypertrophied.	2. The skin is not hypertrophied as a rule.
3. The blood-vessels and sebaceous glands are both involved.	3. The sebaceous glands, only, are involved.
4. Confined to the face.	4. Involves face, back and chest.

Rosacea.	*Syphilis.*
1. History negative.	1. History positive.
2. Not preceded by malaise and sore throat.	2. Preceded by malaise, sore throat, and the rash.
3. Tubercles and pustules involve the sebaceous glands.	3. Cutaneous glands not involved.
4. Color of tubercles is red or purplish, and confined to the face.	4. Color of tubercles coppery and rarely confined to the face.
5. No crusts or ulcers.	5. Crusts and ulcers may be present.

Rosacea.	*Erythematous Lupus.*
1. No scales.	1. Yellowish scales.
2. Color dull or purple.	2. Color erythematous and bright red.
3. No tenderness on pressure.	3. Tenderness on pressure.
4. Papules solid.	4. Papules gelatinous.
5. No cicatrices.	5. Cicatrices present.

Rosacea.	*Frost Bites.*
1. Parts red or purplish and no swelling.	1. Parts bluish-red and swollen.
2. Skin appears greasy and not inflamed.	2. Skin looks inflamed and is painful.

Pathology.—In the first stage of rosacea the minute blood-vessels are congested, while in the second stage they become hypertrophied and permanently dilated. An infiltration of the lymphoid cells takes place into the tissues surrounding the blood-vessels, and the connective-tissue corpuscles proliferate.

In the third stage there is hypertrophy of the cutaneous glands and the tissues of the part and the growth of a new connective-tissue element. The horny layer of the epidermis is almost destroyed, while the mucous layer is very thick. The papillæ are enlarged, and the blood-vessels markedly dilated and varicosed.

Etiology.—The cause of this patient's rosacea is due to the irritation produced by the heat of the stove. Two weeks before she noticed any change in

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the condition of her face she began to cook in a boarding-house which necessitated her to be before the fire most of the time. She is still employed as a cook, but in a private family.

Rosacea is more common in men than in women in the middle age. At the age of puberty it is more common in girls. Uterine disorders and menopause are strong etiological factors. Heredity, gout, and rheumatism are predisposing causes. In men the hypertrophic variety is considered hereditary, while in women the disease seldom passes beyond the first stage. Among some of the other predisposing causes are chlorosis, anæmia, alcoholic excess, want of cleanliness, and in those whose faces are exposed to extreme heat and cold.

Treatment.—In all cases seek the cause and remove it. We shall, therefore, request her to discontinue cooking.

It is all important that her diet be simple, well cooked, and easily digestible. She must abstain from the use of too much sugar and starchy foods. Alcoholic beverages, tea, and coffee are also interdicted.

To assist and correct her digestion we will prescribe the following:—

℞ Strychninæ sulphatis ..... gr. ℔.
Acidi hydrochlorici diluti ..... f℥ss.
Glyceriti pepsini ..... q. s. ad f℥iij.
Misce. Signa. One teaspoonful in a little water after each meal.

Locally, to lessen the itching and at the time act as an astringent, the combination containing:—

℞ Zinci carbonatis ..... gr. xx.
Acidi borici ..... 3j.
Liquoris calcis ..... f℥iij.
Aquæ hamamelidis ..... q. s. ad f℥vj.
Misce. Signa. Apply locally with a piece of cotton every three or four hours.

Galvanism is of great value in this class of patients applied to the affected parts to equalize the circulation and tone up the relaxed blood-vessels in the parts. From five to ten milliampéres applied daily for ten minutes.

Prognosis.—The prognosis depends largely upon the cause of the disease. If the affection has not passed beyond the first or second stage, and the exciting cause can be eradicated, it can usually be relieved and even cured. The result, however, depends essentially upon the habits of the patient. In this individual I believe the disease can be entirely eradicated owing to the fact that the exciting cause can easily be removed. She must also observe our suggestion to the letter as regards her diet and habits.

PSORIASIS.

The next patient suffers from psoriasis and during the many years of my life in the practice of medicine, I never have seen such a severe case of this disease. I have requested the patient to strip off his clothing and come denuded before you, so that you can see the extent of the disease which in-

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volves his entire body except the face, hands, and feet. Over the back and abdomen you will notice infiltrated, rough, scaly patches from three to five inches in diameter. Over the arms, legs, and scalp the patches are not so large, but are very closely situated. In fact, his entire body is covered with the disease.

History.—The patient is 29 years of age; nativity, United States; single; occupation, bartender. The family history is negative. No one in the family has ever had a similar disease. The father, however, is subject to rheumatism.

The patient, as a child, had diphtheria, measles, whooping-cough, and rheumatism following exposure at the age of 12 years. At the age of 20 he had another attack of inflammatory rheumatism. Six years ago he had syphilis, but took treatment for a year only.

Habits.—He chews and smokes tobacco excessively, drinks alcoholic liquors frequently during the day while at work, but never gets drunk.

Present Illness.—About three years ago two, small, red papules appeared on each elbow and were covered with white scales. Soon many more similar papules covered with scales appeared and coalesced, forming what you now see, large infiltrated patches covered profusely with scales attended with desquamation. He also complains of pain in his limbs, especially at night after 12 o'clock. His appetite is good, the bowels are regular. In the morning upon rising he is often nauseated.

Diagnosis.—The diagnosis of psoriasis in this case is easy, but some might suspect some other disease owing to the severity and extent of involvement of the body.

The history of the onset, the chronicity of the affliction which was never attended with fever, and the character lesions are sufficient to make a positive diagnosis of psoriasis. Psoriasis is defined as a chronic inflammatory cutaneous disease, characterized by an outgrowth of the epithelial layers of the skin and generally appearing as slightly-elevated, round, red patches of various sizes covered with dry, white scales. This disease of the skin often resembles eczema, squamosum, syphilis, and seborrhœa sicca.

The following differential points will assist you in a correct diagnosis:—

Psoriasis.	*Eczema Squamosum.*
1. The primary lesion begins as a papule, covered with whitish scales.	1. The primary lesion begins as an erythematous patch, a vesicle, pustule or moist spot.
2. Itching slight, rarely intense.	2. Itching intense.
3. Affected areas sharply defined.	3. Affected areas gradually fade into healthy skin.
4. Areas occur both large and small, and are usually round.	4. Areas are large and irregular.
5. Involves with preference the extensor surfaces.	5. Involves with preference the flexor surfaces.
6. The lesions often remain unchanged for months.	6. The lesions rapidly change.

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7. Eruption is always dry.	7. Eruption usually moist.
8. Areas are covered with many white scales.	8. Areas are covered with small yellowish scales or with crusts.
9. The course is chronic.	9. Course is either acute, subacute or chronic.
Psoriasis.	*Syphilis Squamous.*
1. History negative.	1. History of primary lesion.
2. History of rheumatism, gout, syphilis or gastro-intestinal catarrh.	2. History of sore throat syphilitic fever and other concomitant signs.
3. Extensor surfaces of arms and legs, nearly always involved.	3. Extensor surfaces of arms and legs rarely if ever involved.
4. Lesions regular in outline.	4. Polymorphous arrangement of lesions.
5. Scales are shining silvery-white and abundant.	5. Scales dirty yellow and few in numbers.
6. Itching slight.	6. Itching entirely absent.
Psoriasis.	*Sebarrhea Sicca.*
1. Eruption in areas of entire scalp.	1. Eruption usually involves the scalp over the top of the head only.
2. Scales dry and silvery-white.	2. Scales yellowish, fatty and greasy to the touch.
3. Scales consist of epithelial cells.	3. Scales consist of dried sebum.
4. Base of eruption is inflammatory and infiltrated.	4. Base of eruption is anæmic.
5. Eruption also over the body and extremities.	5. No eruption over the body.

Pathology.—A section of the involved skin, under the microscope, shows a hyperplasia of the mucous layer and of the normal constituents of the rete malpighii. The increase occurs chiefly in the intercapillary portion of the layer which, growing downward, gives the appearance of increased size, which is not found to be increased upon close examination. In the advanced stages of the affection the superficial blood-vessels of the corium become dilated, migration of the white corpuscles follows, and the connective-tissue and the blood-vessels of the corium become the seat of round-cell infiltration which, together with effused serum, divides the connective-tissue into open meshes. There is no involvement of the sebaceous and sudoriferous glands, but there is hyperplasia of the external root of the hair, extending into the cutis.

Etiology.—The chief cause of this man's psoriasis I believe is due to his uncured syphilis. Of course his rheumatic diathesis and the chronic gastro-intestinal disturbance, due to the overindulgence of alcoholic liquors, are great factors in aggravating the disease. Constitutional disturbance is always found in these patients, and I am not inclined to the belief of the microbic theory as the cause of the disease. Some claim it to be hereditary and to follow scrofula, syphilis, and other constitutional diseases which leave the blood in an impoverished condition.

Treatment.—Psoriasis, by many physicians, is considered incurable. If the real cause can be ascertained which, as a rule, is nearly always found to be constitutional it can be cured by persistent and rigid treatment. No disease

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requires more careful and urgent treatment. Careful attention must be given to hygienic measures, as well as to external and internal treatment. Always treat the cause. In this patient I believe that his syphilitic condition is the real cause of the disease, and I will place him on the mixed treatment, as follows:—

℞ Hydrargyri chloridi corrosivi ..... gr. ij.
Potassii iodidi ..... ʒss.
Syrupi sarsaparillæ compositi ..... q. s. ad fʒiij.
Misce. Signa. One teaspoonful in a glass of water two hours after each meal.

This combination is also admirable as an anti-rheumatic.

Externally he needs a stimulating ointment to lessen the infiltration and stimulate the skin to a more normal exfoliation. For this purpose I have found the following ointment valuable:—

℞ Acidi salicylici ..... ʒiss.
Resorcinolis ..... ʒj.
Olei cadini ..... fʒj.
Unguenti sulphuris,
Unguenti zinci oxidi, of each, ... ʒj.
Misce. Fiat. unguentum.
Signa. Apply locally twice daily.

The bran baths are especially valuable in psoriasis to soften the skin and loosen the adherent scales. From two to three pounds of bran to a bath-tub half full of water is sufficient.

The diet must be plain, well cooked, and easily digestible. Highly seasoned foods, tea, coffee, and alcoholic beverages are interdicted and must be avoided.

Original Articles

THE RELATION BETWEEN RETINAL HAEMORRHAGES AND HIGH ARTERIAL PRESSURE.[1]

By L. WEBSTER FOX, M.D.,
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AND
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Following the reasoning usually given that there is a degeneration of the vessel wall from an accompanying anæmia or as a result of toxic influences, as chemical poisons or venoms introduced into the system, or autogenous metabolic products, the result of a faulty body chemistry, we have been led to believe that these are merely predisposing factors, whereas the true or ex-

[1] Read at the meeting of the Colorado State Medical Society, Denver, Sept. 9, 1908.

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citing cause of retinal hæmorrhages (in a very large proportion of the cases) is a transient or a persistent abnormal elevation of the arterial blood-pressure.

Structures containing end arteries, as the eye, brain or kidney, with their usual delicate capillary endings, are least capable of withstanding this type of a lateral strain imposed upon their walls. An examination of the literature upon this subject shows that attention had been briefly called to this phenomenon as a cause of retinal hæmorrhages, twenty-five years ago by Mackenzie and Watson, who studied these cases imperfectly with the sphygmograph; also, more recently, by E. W. Stevens,[2] and later by Black,[3] both of Denver.

That this is an etiologic factor we believe to be partially established by our researches in this particular field during the past three years. The studies of the blood-pressure, blood, and urine of 100 cases was decided upon to be investigated with this end in view. The patients examined were those seen within the first forty-eight hours following the hæmorrhage; the larger number, however, were observed within twelve hours of the onset. In all cases the blood-pressure was estimated with the Stanton modification of the Riva-Rocci Sphygmomanometer with a 9 cm. cuff. The estimations were made either in the sitting posture with the arm elevated to the level of the heart or in the supine position with it bearing the same relation to that organ. The systolic pressure only is recorded, as it represents the greatest pressure the vessels were called upon to withstand. A complete blood-count and an analysis of the urine with particular reference to the presence of albumin, glucose, or casts was made in each case. The necessary data in the history and physical examination were then considered in order to determine the predominant factors essential in making a general diagnosis, irrespective of the ocular condition.

The thought which was responsible for these investigations was an effort to prove this new field of vascular study, namely, the systematic estimation of the arterial blood-pressure as having both an etiologic and therapeutic relation to hæmorrhages of the conjunctiva and retina. The blood-pressure should be carefully and immediately studied in this class of ophthalmic cases, first, with a view to determining the presence of one of the most frequent causal conditions; secondly, to permit us to intelligently direct the treatment toward absorption of the existing clot and the prevention of further hæmorrhages. It is thus by this timely interference that many years of vision and even life may be saved these individuals. They are often, as most of us know, quite robust and enjoying the best of health in so far as their knowledge goes, and only in the latest stages, when tangible subjective symptoms appear, can they be persuaded to relinquish their activities and excesses. The oculist, therefore, often being the first physician to be consulted, should study these patients with the internist, in order that the most comprehensive knowledge possible should be available for the sufferer.

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[2] Ophthalmology, 1906.

[3] The Journal of the American Medical Association, July 18, 1908.

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The tabulated results of the investigation of one hundred consecutive cases, derived from private and dispensary practice, are herewith subjoined; the number, although not large, we consider sufficient to illustrate our premises.

Case	Age	Ocular Diagnosis	Blood Pressure	Blood H.	Blood R. B. C.	Blood W. B. C.	Urine	General Diagnosis
1	58	Hæmorrhagic retinitis	158 mm.	70 per cent.	4,100,000	7,200	Albumin, trace No casts.	Arteriosclerosis.
2	35	Hæmorrhagic retinitis Choked disc.	240 mm.	80 per cent.	3,960,000	7,000	Albumin and casts.	Chronic parenchymatous nephritis.
3	46	Anæmia of retina.	152 mm.	70 per cent.	3,200,000	6,800	Negative.	Secondary anæmia.
4	52	Hæmorrhagic retinitis Subconjunctival hæmorrhage.	178 mm.	85 per cent.	4,040,000	7,000	Albumin. No casts.	Interstitial nephritis.
5	56	Retinal hæmorrhages.	240 mm.	50 per cent.	3,740,000	7,800	Albumin and casts.	Interstitial nephritis.
6	34	Albuminuric retinitis	120 mm.	62 per cent.	4,120,000	7 000	Albumin and casts.	Chronic parenchymatous nephritis.
7	36	Subconjunctival hæmorrages.	110 mm.	73 per cent	5,930,000	4,800	Negative.	Chloro-anæmia.
8	52	Albuminuric retinitis.	212 mm.	78 per cent.	4,030,000	7,200	Albumin and casts.	Chronic interstitial nephritis.
9	38	Retinal asthenopia and hæmorrhages.	160 mm.	68 per cent.	2,810,000	5,000	Negative.	Pernicious anæmia.
10	54	Arteriosclerosis of retinal vessels.	215 mm.	78 per cent.	4,120,000	6,800	Albumin. Few casts.	Arteriosclerosis.
11	36	Tumor of orbit.	105 mm.	85 per cent.	5,960,000	6,400	Negative.	Orbital tumor.
12	58	Hæmorrhagic retinitis	136 mm.	90 per cent.	4,390,000	5,600	Negative.	Arteriosclerosis.
13	35	Hæmorrhagic retinitis	110 mm.	76 per cent.	3,840,000	5,800	Negative.	Anæmia and intestinal autotoxæmia.
14	53	Subconjunctival hæmorrhages.	230 mm.	90 per cent.	6,050,000	5,000	Albumin. Few casts.	Interstitial nephritis.
15	48	Dialitic hæmorrhagic retinitis.	120 mm.	90 per cent.	5,350,000	7,200	Glucose.	Diabetes.
16	38	Œdema of retina.	110 mm.	95 per cent.	5,050,000	7,400	Negative.	Intestinal autointoxition.
17	45	Subconjunctival hæmorrhage.	160 mm.	84 per cent.	4,120,000	7,600	Albumin and Casts.	Early interstitial nephritis.
18	57	Albuminuric retinitis. Hæmorrhages.	155 mm.	92 per cent.	5,060,000	6,500	Albumin and casts.	Advanced interstitial nephritis.
19	29	Retinal hæmorrhages. Double choked disc.	135 mm.	85 per cent.	4,020,000	8,000	Negative.	Syphilis.
20	58	Retinal hæmorrhages.	142 mm.	80 per cent.	3,910,000	7,400	Albumin, negative. Hyalin, casts.	Interstitial nephritis.
21	78	Hæmorrhage of right macula.	170 mm.	75 per cent.	4,800,000	7,200	Albumin. No casts.	Senile Arteriosclerosis.
22	46	Anæmia of retina. Old hæmorrhage.	152 mm.	67 per cent.	3,650,000	6,000	Albumin. No casts.	Symptomatic anæmia.
23	49	Albuminuric retinitis.	135 mm.	85 per cent.	4,420,000	7,200	No Albumin. Casts.	Interstitial nephritis.
24	54	Hæmorrhagic retinitis	236 mm.	80 per cent.	4,200,000	7,400	Albumin. Casts	Interstitial nephritis.
25	43	Albuminuric retinitis.	190 mm.	83 per cent.	4,620,000	8,000	Albumin and casts.	Secondary contracted kidney.
26	36	Subconjunctival hæmorrhage.	135 mm.	90 per cent.	4,700,000	7,800	No albumin. Casts.	Kidney of pregnancy.
27	32	Albuminuric and hæmorrhagic retinitis.	193 mm.	85 per cent.	5,010,000	7,200	Albumin and casts.	Chronic parenchymatous nephritis.
28	30	Hæmorrhagic retinitis	125 mm.	75 per cent.	4,570,000	8,000	Negative.	Secondary anæmia. Overwork and exhaustion.
29	48	Hæmorrhagic retinitis	166 mm.	72 per cent.	4,730,000	9,000	Albumin. Casts	Interstitial nephritis.
30	52	Albuminuric retinitis.	235 mm.	60 per cent.	3,400,000	6,600	Albumin and casts.	Late state interstitial nephritis.
31	34	Anæmia of retina with small hæmorrhages.	130 mm.	65 per cent.	2,510,000	130,000	Albumin. No casts.	Leukæmia.
32	64	Hæmorrhagic retinitis	204 mm.	60 per cent.	4,350,000	7,400	Albumin and casts.	Chronic interstitial nephritis.
33	45	Hæmorrhagic retinitis	220 mm.	82 per cent.	4,110,000	7,600	Albumin and casts.	Chronic interstitial nephritis.
34	36	Ocular headache. Subconjunctival hæmorrhage.	122 mm.	83 per cent.	4,180,000	7,400	Oxaluria.	Lithæmia.
35	64	Retinal hæmorrhage.	106 mm.	92 per cent.	5,001,000	7,600	Albumin. No casts.	Arteriosclerosis.
36	54	Subconjunctival hæmorrhage.	178 mm.	96 per cent.	4,992,000	8,200	Albumin. No casts.	Arteriosclerosis.
37	37	Subconjunctival hæmorrhage.	142 mm.	78 per cent.	5,001,000	7,600	No albumin or casts. Uric acid.	Lithæmia.
38	47	Subconjunctival hæmorrhage.	170 mm.	90 per cent.	4,060,000	7,400	Albumin and casts.	Arteriosclerosis.
39	44	Subconjunctival hæmorrhage.	160 mm.	85 per cent.	4,120,000	8,000	Albumin and casts.	Chronic Parenchymatous nephritis.
40	42	Hæmorrhagic retinitis	152 mm.	88 per cent.	4,200,000	7,800	Albumin. No casts.	Retinal and general arteriosclerosis.

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Case	Age	Ocular Diagnosis	Blood Pressure	Blood H.	Blood R. B. C.	Blood W. B. C.	Urine	General Diagnosis
41	58	Albuminuric retinitis.	158 mm.	70 per cent.	3,980,000	8,000	Albumin and casts.	Arteriosclerosis.
42	59	Subconjunctival hæmorrhage.	149 mm.	84 per cent.	4,010,000	6,500	Albumin and casts.	Chronic interstitial nephritis.
43	62	Sclerosis of retinal vessels.	162 mm.	95 per cent.	4,832,000	6,800	Albumin. No casts.	Arteriosclerosis and presenility.
44	29	Albuminuric retinitis.	148 mm.	82 per cent.	4,100,000	7,600.	Albumin and casts.	Chronic parenchymatous nephritis.
45	72	Unilateral retinal hæmorrhages.	232 mm.	80 per cent.	3,720,000	7,200	Albumin and casts.	Arteriosclerosis and arteriosclerotic kidney.
46	36	Colloid degeneration of retinal vessels.	132 mm.	68 per cent.	3,840,000	4,800	Albumin, a trace. Casts, few.	Beginning retinal degeneration.
47	45	Retinal hæmorrhage.	144 mm.	82 per cent.	4,120,000	6,800	Albumin. No casts.	Early arteriosclerosis.
48	43	Macular hæmorrhage.	136 mm.	88 per cent.	4,020,000	7,200	Albumin. No casts.	Early cirrhotic kidney.
49	54	Retinal hæmorrhage.	255 mm.	55 per cent.	3,640,000	6,800	Albumin and casts.	Chronic interstitial nephritis.
50	63	Silver wire retinal vessels.	140 mm.	75 per cent.	4,114,000	6,200	Albumin. No casts.	Arteriosclerosis.
51	56	Retinal congestion, slight hæmorrhage and œdema.	148 mm.	92 per cent.	5,001,000	7,400	No albumin. No casts.	Passive cerebral congestion result of aneurysm.
52	36	Subconjunctival hæmorrhage.	144 mm.	94 per cent.	4,020,000	7,800	No albumin. No casts. Uric acid.	Lithemic hypertension progressing toward cirrhotic kidney.
53	33	Albuminuric retinitis.	122 mm.	60 per cent.	3,812,000	6,800	Albumin and many casts.	Chronic parenchymatous nephritis.
54	53	Albuminuric retinitis.	264 mm.	76 per cent.	4,020,000	7,200	Trace albumin Few casts.	Chronic interstitial nephritis.
55	46	Diabetic hæmorrhagic retinitis.	110 mm.	84 per cent.	4,760,000	7,400	Glucose present. Albumin and casts, negative.	Diabetes.
56	44	Hæmorrhagic retinitis	185 mm.	90 per cent.	4,328,000	7,200	Albumin, negative. Casts negative.	Sudden vascular rupture under excitement in case of early atheroma.
57	66	Cataract and conj. hæmorrhage.	164 mm.	66 per cent.	3,600,000	5,400	Albumin and casts present.	Chronic interstitial nephritis.
58	43	Retinal hæmorrhage.	232 mm.	95 per cent.	5,100,000	7,800	Albumin + Casts present.	Chronic interstitial nephritis.
59	46	Retinal hæmorrhage.	260 mm.	75 per cent.	5,340,000	11,000	Albumin + Casts +	Chronic interstitial nephritis. Reduced pressure to 180.
60	27	Recurrent iritis and retinal hæmorrhage.	126 mm.	90 per cent.	4,800,000	7,200	Albumin, trace Cast, negative.	Special iritis.
61	40	Retinal hæmorrhage.	188 mm.	88 per cent.	4,621,000	7,800	Albumin, negative. Casts, negative.	Arteriosclerosis.
62	58	Retinal hæmorrhage.	178 mm.	90 per cent.	4,392,000	8,000	Albumin, trace No casts.	Arteriosclerosis.
63	50	Retinal hæmorrhage.	148 mm.	87 per cent.	4,862,000	7,600	Albumin, trace	Interstitial nephritis.
64	63	Glaucoma. Subconjunctival hæmorrhages.	225 mm.	96 per cent.	5,010,000	8,200	Albumin, trace Few casts.	Glaucoma and interstitial nephritis.
65	59	Retinal hæmorrhages.	265 mm.	90 per cent.	4,110,000	7,600	Albumin + Casts.	Interstitial nephritis
66	69	Retinal hæmorrhages.	195 mm.	69 per cent.	3,800,000	7,200	Albumin, excess. Casts numerous,	Moderate cardiac dilatation. Chronic nephritis.
67	38	Retinal hæmorrhage.	160 mm.	76 per cent.	4,160,000	7,600	Albumin, trace Few casts.	Chronic nephritis.
68	45	Retinal hæmorrhage.	195 mm.	94 per cent.	4,980,000	7,800	Albumin, trace No casts.	Arteriosclerosis.
69	54	Retinal hæmorrhage.	212mm.	91 per cent.	4,001,000	7,600	Albumin, trace Casts few.	Chronic interstitial.
70	54	Retinal hæmorrhage.	226 mm.	95 per cent.	4,872,000	7,200	Albumin, trace Few hyalin.	Chronic interstitial.
71	58	Hæmorrhagic retinitis	164 mm.	72 per cent.	4,211,000	8,000	Albumin, trace Few casts.	Arteriosclerosis.
72	36	Hæmorrhagic retinitis Choked disc.	242 mm.	83 per cent.	4,480,000	7,600	Much albumin. Many casts.	Chronic parenchymatous nephritis.
73	53	Retinal and Subconjunctival hæmorrhage.	179 mm.	86 per cent.	4,040,000	7,400	Albumin, trace Few casts.	Interstitial nephritis.
74	57	Hæmorrhagic retinitis	243 mm.	54 per cent.	3,622,000	6,200	Albumin and casts.	Interstitial nephritis.
75	36	Albuminuric and hæmorrhagic retinitis.	144 mm.	62 per cent.	3,921,000	6,800	Albumin and casts.	Chronic parenchymatous nephritis.
76	54	Arteriosclerosis of retinal vessels. Small hæmorrhages.	215 mm.	78 per cent.	4,013,000	7,400	Albumin, trace Few casts.	Interstitial nephritis.

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Case	Age	Ocular Diagnosis	Blood Pressure	H.	Blood R. B. C.	W. B. C.	Urine	General Diagnosis
77	60	Hæmorrhagic retinitis	130 mm.	92 per cent.	4,382,000	5,600	Albumin, trace No casts.	Arteriosclerosis.
78	52	Subconjunctival hæmorrhages.	234 mm.	84 per cent.	5,020,000	5,800	Albumin. Few casts.	Interstitial nephritis.
79	46	Subconjunctival hæmorrhage.	164 mm.	85 per cent.	4,320,000	7,600	Albumin, trace Occasional cast.	Early interstitial nephritis.
80	79	Macular hæmorrhage.	178 mm.	78 per cent.	3,900,000	6,200	No Albumin. Few casts.	Senility. Arteriosclerosis.
81	54	Retinal hæmorrhages.	235 mm.	81 per cent.	4,196,000	8,000	Albumin, trace Many casts.	Chronic interstitial nephritis.
82	31	Albuminuric and hæmorrhagic retinitis.	194 mm.	86 per cent.	4,680,000	7,200	Much Albumin Many casts.	Chronic parenchymatous nephritis.
83	65	Hæmorrhagic retinitis	232 mm.	62 per cent.	3,420,000	6,600	Albumin. Many casts.	Advanced interstitial nephritis.
84	64	Hæmorrhagic retinitis	168 mm.	86 per cent.	4,021,000	6,800	Albumin. No casts.	Arteriosclerosis.
85	38	Subconjunctival hæmorrhage.	144 mm.	78 per cent.	5,010,000	7,200	No albumin or casts. Uric acid.	Lithæmia.
86	43	Retinal hæmorrhage.	153 mm.	87 per cent.	4,121,000	8,000	Albumin, trace No casts.	Early arteriosclerosis.
87	71	Retinal hæmorrhage.	230 mm.	81 per cent.	3,890,000	4,800	Albumin, trace Few casts.	Arteriosclerosis and arterioscleroric kidney.
88	55	Retinal hæmorrhage.	255 mm.	61 per cent.	3,640,000	6,800	Albumin and casts.	Chronic interstitial nephritis.
89	57	Retinal hæmorrhage.	184 mm.	64 per cent.	3,890,000	7,200	Albumin and casts.	Chronic interstitial nephritis.
90	28	Albuminuric retinitis.	146 mm.	73 per cent.	4,001,000	7,600	Much albumin, Many casts.	Chronic parenchymatous nephritis.
91	57	Retinal hæmorrhage.	156 mm.	96 per cent.	5,010,000	8,000	Albumin, faint trace. No casts.	Arteriosclerosis.
92	33	Albuminuric and hæmorrhagic retinitis.	124 mm.	72 per cent.	3,920,000	7,800	Much albumin. Many casts.	Chronic parenchymatous nephritis.
93	44	Hæmorrhagic retinitis	184 mm.	88 per cent.	4,231,000	7,200	Albumin, negative. Casts few.	Early arteriosclerosis.
94	67	Subconjunctival hæmorrhage.	165 mm.	68 per cent.	3,920,000	7,400	Albumin present. Few casts.	Chronic interstitial nephritis.
95	43	Retinal hæmorrhage.	228 mm.	84 per cent.	4,200,000	7,600	Albumin and casts present	Chronic interstitial nephritis.
96	47	Retinal hæmorrhage.	196 mm.	89 per cent.	4,021,000	8,000	Albumin, trace Casts numerous.	Early arteriosclerosis. Cirrhotic kidney.
97	54	Retinal hæmorrhage.	218 mm.	92 per cent.	4,211,000	6,800	Albumin, trace Casts few.	Chronic interstitial nephritis.
98	50	Retinal and subconjunctival hæmorrhage	152 mm.	90 per cent.	4,078,000	9,000	Albumin, trace No casts	Generalized arteriosclerosis.
99	31	Albuminuric and hæmorrhagic retinitis.	148 mm.	66 per cent.	4,112,000	8,200	Albumin, excessive. Numerous casts	Chronic parenchymatous nephritis.
100	63	Retinal hæmorrhage.	229 mm.	97 per cent.	4,820,000	7,800	Albumin, trace Casts numerous.	Chronic interstitial nephritis.

Eighty per cent. of the above cases occurred in diseases in which hypertension is the rule, and if not a constant accompaniment, the cardiac hypertrophy present would be sufficient under extreme exertion or emotion for the arterial pressure to become decidedly elevated.

By far the largest percentage of retinal hæmorrhages were found in chronic interstitial nephritis, 40 per cent.; arteriosclerosis second, with 27 per cent., and chronic parenchymatous nephritis third, with 13 per cent. The figures are suggestive in that it is to diseases of the kidney first, and of the arteries secondly, that our attention should be directed when seeking the cause of a given case of retinal apoplexy.

This series will also serve to clarify existing knowledge upon the relative frequency of occurrence of these various causes which are usually merely listed

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in most text-books without reference as to which organ or system should be investigated first.

Anæmia: simple, pernicious, and leukæmic, made up 6 per cent. of our cases, there being one of spleno-myelogenic leukæmia, in which hæmorrhage is rather uncommon, and one early case of pernicious anæmia. In all but one instance there were hæmorrhages of some type, and the blood-pressure, with one exception, was subnormal.

Singularly the cases of lithæmia, 4 per cent., revealed only subconjunctival hæmorrhages; in none was it possible to determine the presence of even minute retinal hæmorrhages. A moderate degree of hypertension for the age was the rule.

In two instances no other diagnosis could be made but that of intestinal autointoxication, there being vertigo, persistent drowsiness, and an excess of indican and skatol found in repeated urinalyses. Both were examples of hypertension: one showed hæmorrhage, the other œdema of the retina.

Diabetic retinitis with hæmorrhages furnished two cases. In both, the blood-pressure was subnormal, they belonging to the toxic group of causes of retinal apoplexy.

Secondary syphilis, a comparatively rare cause of these hæmorrhages, was the etiologic factor in two instances. On one, there was an accompanying iritis; in the other beginning choked disc; in neither was the arterial pressure unduly high. The single instance in which aneurism was the only ascertainable cause, failed to manifest any abnormality of the blood, blood-pressure, or the kidneys.

I am sure that increased arterial pressure is an important factor in the causation of acute glaucoma. It may be interesting to know that in one case of acute glaucoma, where the blood-pressure was 265 cubic millimeters, twenty ounces of blood was taken from the right arm, when the pressure fell to 150 cubic millimeters. This patient had an attack of acute glaucoma in the right eye two years before. An iridectomy was performed by a skilled operator, but it was not successful. The blood-pressure was evidently so high that the eye was lost by an immediate intraocular hæmorrhage and collapse of the eyeball. When the patient came under my care for a similar attack in the left eye, with tension + 3 and over, and the vision gone for two days, I concluded that a reduction of tension of the eyeball must be obtained somehow before a successful iridectomy could be hoped for. The patient being at this time without light perception. Eserine had failed to make any impression on the dilated pupil, or tension of the eyeball whatsoever. It was interesting to note the condition of the pupil after ten ounces of blood had been drawn from the arm; it commenced to contract, and by the time twenty ounces were taken and tension reduced to 150 cubic millimeters, the pupil contracted to a pinhole and the tension of the eyeball was about normal. I was then able to perform an iridectomy without any untoward result, and useful vision followed. I am positive that by reducing first the arterial pressure from 265 cubic millimeters to 150 cubic millimeters, and secondly, giving the eserine an opportunity to act mechanically in aiding the reduction of the tension of the eyeball, I suc-

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ceeded with the operation, whereas otherwise I should probably have failed.

Treatment.—This subject will be considered only with reference to the departure from the usual line of therapy pursued in this class of cases. In those cases wherein the pressure was found to be abnormally high, in addition to rest, exclusion of light, and the usual local measures, we found that absorption of the clot occurred far more rapidly (from one to three weeks sooner) by employing the following method:—

All plethoric cases with greatly increased arterial tension were admitted to the hospital and immediately bled from the median basilic vein, following the technique usually employed in venesection for any other condition. The sphygmomanometer was adjusted to the opposite arm, and the pressure recorded every three minutes. It was found that it was rarely necessary to reduce it lower than 110 millimeters; for those with original pressure, from 150 to 200 millimeters. Cases presenting systolic pressures of 200 millimeters or over were seldom reduced lower than 150 millimeters. We were often compelled to desist before these reductions occurred, owing to faintness of the patient.

In the less robust, somewhat anæmic cases, we practiced relieving hypertension with the aid of hot-air baths, electric-light baths, or even hot packs. This was found to be nearly as effectual as bleeding in hastening absorption and the restoration of function of the affected eye. In the obese, and when, for any reason, bleeding was refused or was impracticable, thyroid extract, gr. ij, t.i.d., was of considerable use as a vasodilator and to diminish the viscosity of the blood. The above methods, while partially satisfactory, did not tend to produce the freedom from recurrence which characterized the cases upon which venesection was performed. A number of chronic nephritics, with whom retinal hæmorrhages had been habitual for months, have been entirely free from attacks during two years following this treatment. Although within the twenty-four hours following the bleeding the blood-pressure recorded was higher than the elevation taken previous to venesection, there was a daily decline of approximately 10 millimeters per diem for three to four days, which latter pressure was usually maintained for several weeks, at least as long as our observation continued. The routine treatment, after the patient left the hospital, was carefully regulated nitrogenous diet, alkaline waters freely, and warm baths, 110°, for ten minutes, thrice weekly. Medicinal arterial relaxants were used, as sodium iodide, gr. v, in conjunction with sodium nitrite, gr. j, three times daily for three weeks of each month, omitting every fourth week.

In those cases with markedly hæmorrhagic tendencies, as where there were both subconjunctival and retinal extravasations, gallic acid, gr. x, three or four times daily, was added to other measures. Hydrargyrum creta, gr. j, t.i.d., was used in the autotoxic cases, and where the liver and intestinal tract seemed to be principally at fault.

The cases of primary and symptomatic anæmia, diabetes and syphilis were of course not treated by venesection.

Conclusions.—1. A large proportion, 80 per cent. of retinal hæmorrhages,

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occur in individuals suffering from a temporary or permanent high arterial blood-pressure due to the causes enumerated.

2. This excessive intravascular pressure is apparently the most frequent exciting cause of these hæmorrhages.

3. Venesection has proven of value, not only in reducing dangerously high-pressure, but in acting as a powerful stimulus to a speedy absorption of the clot.

REPORT OF A CASE OF BRONCHIAL ASTHMA.

By HERBERT J. SMITH, Ph.G., M.D.,

Lecturer on and Instructor in Applied Therapeutics, Medico-Chirurgical College; Assistant Visiting Physician, Medico-Chirurgical Hospital; Assistant Dermatologist, Philadelphia General Hospital.

We may see many cases of asthma all having the same characteristics, even though produced by widely different causes. My reasons for reporting this particular case are because of its severity, long standing, and its ultimate cure by a very simple means after repeated failures to even relieve the paroxysms by the usual mentioned remedies.

E. M., age 31 years; female, single, no occupation; born in United States. Father died at the age of 34 of pulmonary tuberculosis; mother living in good health, but of a highly nervous, irritable temperament.

Had the usual diseases of childhood when quite young, is said to have had measles twice, the last time when 20 years old, since which time has been subject to attacks of bronchitis with asthma, usually in the early winter, sometimes lasting several months. Has never had rheumatism or other diseases often causing this condition. Uses tea and coffee moderately; when well takes more than the average amount of out-door exercise; leading an active social life without dissipation; appetite most always good; bowels regular. Has never had any of the troubles that often reflexly cause asthma.

The patient came under my care in the early part of January, 1906, during a severe paroxysm that had lasted for six hours, and was one of the many attacks that had occurred daily for more than three weeks. Her condition was one of exhaustion, skin pale, cold, and bathed in a profuse perspiration; lips, tips of fingers, and nose blue; pupils widely dilated and expression anxious. She was sitting on a chair with her arms on the back of another breathing with the greatest difficulty. A few inhalations of chloroform gave relief, this being a remedy that had not been given a trial. Among the medicines tried without relief were morphine, hypodermically; amyl nitrite by inhalation, and several combinations of powder containing stramonium, lobelia, potassium nitrate, etc., these being burned and the smoke inhaled. After a sleep of several hours an examination was made, at which time it was learned that the patient had had a cough with slight expectoration for about three weeks, with almost constant feeling of oppression on the upper part of the chest, severe headache, was nervous and irritable, paroxysms of dyspnœa coming on during

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the day as well as night; had not been able to lie down more than an hour at a time during three weeks. The physical signs of a moderate bronchitis with asthma were present. The expectorate was in rounded gelatinous masses, composed largely of Curschmann's spirals.

Treatment was started by giving calomel to cleanse the intestinal tract, as the lack of exercise had produced constipation. Water was kept constantly heated in the room in which from time to time oil of eucalyptus was added. The following was given by inhalation:—

℞ Olei eucalypti,
Creosoti (Beechwood), of each, ...3j.
Chloroformi .....q. s. ad 5j.
Misce. Signa. Inhale frequently.

This was used by dropping a small quantity on cotton and inhaling by placing near the nostrils; almost immediately relief was noticed, the paroxysms becoming less severe, the expectoration free and muco-purulent in character. In one week's time the patient was out and there has not been an attack of asthma since. A few slight attacks of bronchitis during last winter were promptly relieved by going to bed and resorting to the same treatment.

3303 North Seventeenth Street.

MEDICO-LEGAL.

By E. S. McKEE, M.D.,
CINCINNATI.

Sued for Saving Her Life.

Vienna was recently the scene of a suit of this character. A woman suffering from tuberculous disease of the vertebral column charged a surgeon and his assistant with having caused the disease by means of manipulations successfully instituted to bring her back to life, in collapse, under an anæsthetic. During the operation a gynecological one, the respiration ceased and recourse was had to Sylvester's method, and after a while respiration was restored. She was able to leave the hospital in four days. Noticing a few weeks later that there was something wrong with her spine, she accused the surgeons with having injured it. It was proven by the clinical history of the woman taken before operation, that she had already been under hospital treatment for tuberculosis of several organs, including bones, for some years. The vertebral trouble could, luckily for the defendants, be diagnosed as tubercular without any trouble. The judge not only dismissed the case, but added that he had hardly ever known a charge so unjustly made. The woman, he added, should be grateful to the doctors for having saved her life, even had they really done her some harm, which he was glad to say was not the case.

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Infanticide—Suggested Alterations in Laws for its Punishment.

Mr. F. G. Frayling read a paper before the London Medico-Legal Society in which he said that, owing to the fact that it was so difficult to prove the child's separate existence in law, and to the ordeal of the mother being committed to trial on a capital charge, the crime should no longer be regarded as ordinary murder, from which it differed in several particulars, a distinct offense should be created or it should be regarded as a misdemeanor or felony. The chairman felt that juries often realized that they were not dealing with the person most concerned; further, the death sentence was not deterrent in these cases, as it was never carried out. Dr. Charles Mercier thought that the personal appearance of the girl lead juries to exhibit a leniency to which they had no claim. He doubted if such women were so sensitive as sometimes alleged. The sanctity of human life must be regarded and the death penalty retained as real deterrent. Dr. W. H. Willcox regretted the present attitude of the law which led to almost farcical proceedings in these cases. Mr. John Troutbeck, coroner, held that officers in his position were the only ones who saw what a wicked and corrupt crime infanticide was. They had to deal with the many unidentified babies which were cast away. The criminal courts had to deal only with those which had been traced. Usually no clue was available. If violence preceded the attempted concealment of birth the matter deserved to be treated seriously. Dr. L. Freyberger thought that the proof of separate existence should no longer be required, as it was a stumbling block to the due execution of the law. Dr. C. N. Wise thought that it was absurd for a hiatus to exist between procuring an abortion and killing a child after its birth.

Medical Evidence and Legal Insolence.

The above is the heading of an editorial in the *British Medical Journal*, describing an incident which took place in a London law court. A doctor from the Ophthalmic Hospital had been called in to give testimony on behalf of the plaintiff. The doctor said to Judge Bray: "I have been called here with scant courtesy; I have prepared a statement, and suppose I am here to answer questions. If you wish me to give expert evidence I must ask for a fee." "Stand down, sir," said the counsel for the plaintiff, sharply. "Scant courtesy, I think your attitude is scandalous. The complaints continually made about hospital doctors by poor people appear to be well grounded." The doctor promptly folded his papers and left the court, his honor allowing the incident to pass without comment. The action of the doctor was quite right, and if anyone's actions were scandalous, it was that of the counsel who, doubtless having secured his own fee, tried to brow-beat a member of another profession for refusing to give value without consideration. Additional remarks were gratuitous insults.

The Coroner after Sir Victor Horsley.

This world-renowned surgeon operated recently at Bolingbroke Hospital, London, for brain tumor. The patient died on the third day. Sir Victor

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Horsley was called as a witness and said that the case was such an ordinary one that he did not see why there had been an inquest ordered. Mr. Troutbeck, coroner, a non-medical man, claimed that deaths after operations are not brought to the notice of coroners. The coroner says that the power of dealing with other people's lives by means of surgical operations, should not remain uncontrolled, and without some provisions made in the interests of the public. The people have a right to know the full cause of death in those cases where their relatives have had the misfortune to die after an operation. The coroner was of the opinion that deaths accelerated by an operation would come under the province of the coroner. Deaths due to causes either unnatural or violent, are coroner cases. He knew that a considerable proportion of deaths which were undoubtedly due in part to a surgical operation were never reported to the coroner. We are in a complete state of ignorance as to what proportion of deaths are accelerated by operation. He considered this a serious matter, and one for which a legal remedy was required. The question was too important to be left to any profession whatever, however honored or however skilled. The coroner directed the jury to render a verdict of accidental death if they were of the opinion that the operation was justifiable, and that all due care had been taken. Such a verdict was given.

Sir Victor Horsley is of the opinion that the responsibilities which every operating surgeon has to bear now are heavy enough. If to these be added the prospect that the propriety of the technical methods will be publicly adjudicated by incompetent persons in case the termination is death, the position will be an intolerable one.

Editorial

INDISCRIMINATE KISSING

We as a profession are constantly endeavoring to check epidemics and stamp out all forms of contagious and infectious diseases for the welfare of the public at large, and for the comforts and happiness it will bring to our posterity. We do this without compensation and much against us as regards our financial success. Is there any other profession or a class of business men who are constantly working against their own interests? In spite of our efforts the general public, in many ways, does not heed our kind admonitions. Much has been said and written about the indiscriminate kissing among women and children. Unfortunately we are not in a position to prove by statistics just how much disease is disseminated by the friendly kiss.

Lately the writer had a most unpleasant experience, though interesting scientifically. A young man, age 20, with all the hope and promises of his future success and fortune, was innocently infected with syphilis through a "friendly" kiss on his upper lip by a young woman who enjoyed the privilege

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of good society and had the reputation of being a good girl. Where and how she was infected we do not know. However, the young man being engaged to be married to a young lady attending a female college, he therefore enjoyed the privilege to kiss her whenever he called to see her. Unfortunately, he kissed her before he knew the truth of his condition and infected her with the loathsome disease. She in turn infected, through kissing, a few of her schoolmates. Thus syphilis is often disseminated by the kiss as well as by the use of the common drinking cup.

This is not only true of syphilis, but of many other contagious and infectious diseases. The reason that not more such instances of infection are recorded is due to the fact that we often neglect to go into detail to obtain a correct history and thus ascertain the true source of infection.

Another disease to be considered at this time and in this connection is tuberculosis. We know of an instance that happened recently where a young woman who had pulmonary tuberculosis allowed her sweetheart to kiss her good-night on several occasions. She died within a year after a positive diagnosis was established. After the positive diagnosis had been made, he never kissed her. He, however, also developed pulmonary tuberculosis, and finally succumbed to the disease. An interesting feature of this story is that not another one in either family has in the past four years developed tuberculosis in any form. There is also no history of heredity in either family. She, at the time of infection, was away from home where she met her fiancé, and after the diagnosis was made she went home to die; but she was properly instructed and no one kissed her.

Her fiancé was a strong, robust and healthy fellow, and when he learned the truth of his trouble he would allow no one in the family to touch him, unless he was sure that they would wash their hands immediately afterward.

From this lesson we are led to believe that he contracted the disease by kissing, and that the germs were transported from mouth to mouth and also that they entered his body by way of the stomach and circulation. Also that it is less dangerous to sleep with a tubercular patient than it is to eat with him at the same table or even in the same room.

In the August issue of this journal we gave a short review of an address delivered by Sir William Whitla, of Queen's College, Belfast, Ireland. In the address he clearly and absolutely showed that tuberculosis of all forms is more readily and more often acquired by the ingestion of the germs into the stomach than by inhalation. The reason being that the cilia of the respiratory mucous membrane are continuously fanning the germs away from the lungs toward the pharynx, and thus are cast away from the body by the mucus or swallowed with the saliva and food.

By the report of his experiments he proved that in every instance where the germs were taken into the stomach a tuberculous lesion somewhere in the body would be the result, and that the lungs were most frequently involved in the adult, and the intestines and glands in children.

The danger of kissing lies in the fact that the germs are carried into the stomach with the saliva and food. If it were possible to ascertain correctly the

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number of cases of pulmonary tuberculosis originally infected by kissing, it would prove that the greater majority of cases were among women. The profession is constantly endeavoring to stamp out the disease by teaching the public and by endeavoring to isolate all those infected and to cure them. Little, however, has been said about this dangerous practice as one of the chief modes of dissemination.

Let us be up and doing, and teach the possibility of disseminating infectious and contagious diseases by indiscriminate kissing.

Materia Medica and Therapeutics

ADRENALIN TREATMENT OF INFECTIVE DISEASES.

Dr. Hodick recommends in the treatment of septic peritonitis marked by collapse and low blood-pressure, an injection into the median bacillic vein of six to eight drops of a solution (1 in 1000) of the extract of adrenalin added to about one and one-half pints of physiological saline solution. These injections worked marvelously in Heidenhain's clinic during the past two years and they have been injected after abdominal operations, thus preventing the post-operative effects such as cyanosis and low pulse. (British Medical Journal, September 19, 1908.)

AIR INSUFFLATION IN THE TREATMENT OF PLEURAL EFFUSIONS.

Dr. Archard discusses the value of the insufflation of air as a good method of evacuating a pleural effusion. This harmless method keeps up the compression of the lung which prevents injury and promotes healing. The air takes the place of the heavy liquid and thus relieves the weight on the diaphragm. The technique employed is simple: It consists of the insufflation of air with an ordinary bicycle pump or other vacuum pumps. This air is passed into a flask which has been used for aspiration and to receive the aspirated fluid. The insufflation should be arrested at the slightest discomfort on the part of the patient.

The author reports a case in which he evacuated by this means 4.25 liters of effusion from a tuberculosis process at one sitting. In other cases 4. and 4.8 litres of effusion were removed by Drs. Dufour and Vaquez respectively at one sitting. (Semaine Médicale, Paris, September 14, 1908.)

ANTIFORMIN AS A DISINFECTANT.

Drs. Uhlenhuth and Xylander record the properties of antiformin as an excellent disinfecting preparation. In solution it forms a yellow, clear fluid, alkaline in reaction, having an odor resembling soda and chlorine. This agent consists of a mixture of alkaline hypochlorite and alkaline hydrate and may be used as an oxidizing agent due to the action of the hypochlorites. It is extremely useful for the disinfection of the stools from patients suffering with typhoid and it also has the power to dissolve hard, inspissated fecal material which renders it necessary in urinals, waterclosets, stables, etc. This disinfectant in a 2 to 5 per cent. solution

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kills a majority of the bacteria (cholera, typhoid, paratyphoid, coli, pestifer, suisepticus, staphylococcus, streptococcus, meningococcus and pneumococcus). (British Medical Journal, October 10, 1908.)

ANTIMENINGOCOCCUS SERUM.

L. W. Ladd, Cleveland, Ohio, has employed Flexner's serum in 32 cases, one of which is still in the acute stage and therefore not here considered. In 30 of the other 31 the diplococci were found present to confirm the diagnosis and in almost all cases cultures were positive. The cases were not mild ones but of marked severity and were a severe test of the therapeutic value of the serum. Eleven of the 31 patients died or 35.5 per cent. Six of these, however, were unfair tests, hopeless so far as any therapeutics is concerned, and subtracting these there will be 25 cases with 5 deaths, a mortality of 20 per cent. Twenty-four patients were treated 96 or less hours after onset. This includes 4 of the moribund patients and excluding these, there were 20 cases with 4 deaths and 16 recoveries. Eighteen patients were seen 72 hours or less after onset. Three of the moribund patients fell within this group. Deducting these there are 15 patients with only 1 death, a recovery rate of 93.4 per cent. Thirteen patients were seen 48 hours or less after onset, including 3 of the moribund patients; subtracting these we have 10 patients with 1 death, a mortality of 10 per cent. Five patients were seen 28 hours or less after onset, all recovered. The average duration of the disease of these 5 was 12 days and the duration increased rapidly with those seen after a longer period. The youngest patient was 3 months old, the oldest 28 years. Sequelæ occurred in three cases; foot drop in 1 case, now improving; slight deafness in another, and suppurative arthritis in a third. Ladd finds that in cases in which the organisms are very numerous and extracellular and intracellular, the prognosis is not so good though the symptoms may not be more severe than in other cases. In such cases he would feel like giving a small amount of serum intraspinally with frequent repetitions and larger amounts subcutaneously, as frequent rises of temperature followed injection in these cases, and in one case in particular he could not help thinking that more endotoxins had been liberated than the antitoxic properties of the serum could properly take care of. Absence of fever does not mean necessarily a betterment in condition, as frequently a very purulent spinal fluid may coexist with normal temperature. Several of the cases showed points of interest and one in particular is given in detail. The patient had a sequel of suppurative arthritis in the left knee and microscopic examination of the purulent fluid obtained by aspiration showed an intracellular diplococcus. This was treated by direct injections of the serum into the joint, with the best results, and he feels confident that there will be a perfect recovery. So far as Ladd's personal knowledge extends, this is the first case in which a suppurative knee has been treated by direct injection into the joint of a specific serum of undoubted bactericidal and antitoxic properties and its significance is obvious. (Journal of the American Medical Association, October 17, 1908.)

ANTITHYROIDIN IN THE TREATMENT OF BASEDOW'S DISEASE.

Dr. S. Baumann reports the successful treatment of a case of Basedow's

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disease by the administration of antithyroidin. In conjunction with this treatment, the patient also received electric baths, bodily rest and very gentle gymnastic exercise. The dose of the antithyroidin was eight drops three times daily, then ten drops three times daily. All in all, thirty c.c. were administered. The beneficial results obtained were a disappearance of the nervousness and irritability, a diminution in size of the thyroid tumor and the pulse was strengthened. (Medical Fortnightly, October 10, 1908.)

ANTITUBERCULOUS SERUM IN THE TREATMENT OF TUBERCULOSIS.

Dr. Jacobson reports eleven cases of tuberculosis treated with Marmorek's antituberculous serum. This serum was administered subcutaneously and by rectum, except in a case of tubercular cystitis in which the serum was introduced directly into the bladder. Two or three weeks intervened between two series of injections. After the injections the beneficial effects took place gradually and the prominent symptoms such as cough, expectoration, and dyspnœa were abated. (British Medical Journal, September 26, 1908.)

BALSAM OF PERU IN THE TREATMENT OF WOUNDS.

Dr. Gebele (Muenchener Med. Wochenschrift) recommends balsam of peru in the treatment of contused and lacerated wounds especially of the fingers and toes. This drug has the following actions: bactericidal, chemotactic and it envelops bacteria. Necrosis is prevented and the most gratifying results were obtained by the combination of Bier's hyperæmic method with the balsam treatment. (The Military Surgeon, October, 1908.)

CALCIUM CHLORIDE IN AORTIC ANEURISM.

Dr. Ambrose records a case of aortic aneurism in which all the symptoms except a slight headache, had disappeared as a result of the administration of calcium chloride for about two months. The calcium chloride was given three times daily. The aneurism was clearly visible under the x-ray. (Jour. Amer. Med. Assoc., Oct. 31, 1908.)

CRUDE TAR IN MEMBRANOUS COLITIS.

Dr. David Wark, of New York, advocates as a cure for membranous colitis the use of the crude tar sold by ship chandlers (Pinus Palustris), which is to be mixed with flour as an excipient and placed in No. 2 capsules, two or three to be taken about one hour after meals. It acts as a laxative and relieves the obstinate constipation, pain in the abdomen, and tenesmus very speedily. A complete cure can be obtained from four to six weeks. (Medical Record, September 5, 1908.)

DIET IN THE TREATMENT OF DIABETES.

Dr. Kolisch considers the dietetic treatment of severe diabetes as the most important. He advocates: (1) The intake of the food should be reduced to a minimum, because the more food that is injected the more glycosuria will be present. (2) The proteids should be reduced in quantity, because large quantities of proteids are most irritating to the plasma cells and most liable to cause breaking down of the cell with increased glycosuria. (3) The diet should contain as much of carbohydrates as can be taken without increase of glycosuria. The author has found that the patients will often put on weight and strength on such a vegetarian diet. The diet is made more liberal as the

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glycosuria diminishes and believes that the number of calories needed is less for a diabetic patient than a normal person if the diet is suitably chosen. (British Medical Journal, October 24, 1908.)

EFFECT OF COLD ON NEOPLASMS.

De Keating-Hart believes that the continuous application of cold is a valuable adjunct to the treatment of malignant tumors. The pains will lessen, the tumor will diminish in size, and the discharge will often lose its disagreeable odor. After-effects, such as diarrhœa or neuralgia, will rarely be complained of. Superficial carcinomata are preferably covered with ice bags; in carcinoma of the stomach and mouth, pieces of ice are swallowed, while in neoplasms of the abdominal organs, coils are placed upon the abdomen. The effects of warmth are just the opposite. (Journal de Prat., 1908, No. 16.)

EUPHORBIA: ITS VALUE IN ASTHMA AND BRONCHIAL CATARRH.

Dr. M. Artault recommends the use of euphorbia in the treatment of asthma and bronchial catarrh. This drug acts directly on the cardiac and respiratory centres and exerts a reflex action upon the naso-pharyngeal branch of the pneumogastric nerve. It has a decided effect upon asthma by modifying the secretions and thus alleviating and suppressing the attacks. The drug can be administered either in the form of an extract, tincture and decoction.

Dose of extract being 7½ to 30 grs. per day; the tincture being 30 to 60 minims; and decoction 1 teacupful 3 or 4 times a day. (Lancet, July 25, 1908.)

GONORRHŒA VACCINE.

W. J. Butler, Chicago, and J. P. Long, Birmingham, Ala., report opsonic treatment of gonorrhœa in female children in 25 cases. The patient's index was taken every other way with very few exceptions and every dose was administered and regulated according to the index. Usually from one to several indices were taken before the inoculations were begun, in order to test the immunity wave for the individual during this time. No local treatment was employed. As controls, the phagocytic count of four healthy boys was taken to get an average normal to compare with that of the patients. It is desirable to take at least four cases, as a phagocytic count of healthy individuals may vary considerably. On the average the inoculation had to be repeated every fifth or sixth day. Only one strain of vaccine was employed, the authors seeing no advantage in mixed strains. Twelve acute cases, that is patients coming within a few weeks from their infection, were treated. Nine of these patients recovered after an average of 43 days of treatment. The three who did not recover averaged 38 days. There were 13 chronic cases, in 11 of which the patients recovered after a period averaging 39 days. Five cases, one acute and four chronic, were treated with the Rogers and Torrey serum with pretty uniform negative results. The authors conclude that in the treatment of gonorrhœa in female children, gonococcus vaccine is more effective than local applications, which they think in some cases actually delay recovery. In many cases, more particularly those of long standing, the vaccine treatment produces marked improvement and often recovery. This does not hold good, however, in all cases, some requiring a very prolonged course of inoculation. The effective dosage varies in different cases and at different times in the same

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case. It will be best determined by the opsonic index to gonococcus. They found doses varying from 5 to 50 million very satisfactory. In using the inoculations without the index in these quantities inoculation should be given every fifth or sixth day. Doses up to a 100 million only very exceptionally produce any untoward symptoms but do not seem more effective than smaller ones. Their experience does not warrant recommendation of serum treatment in these cases. (Journal of the American Medical Association, October 17, 1908.)

HYDROTHERAPHY IN SCARLATINA.

D. S. Hanson, Cleveland, advocates the use of the tub-bath at 90° F. early in the treatment of scarlatina, especially the severe toxic cases, for the nervous symptoms, although in patients with high temperature in whom severe nervous symptoms are lacking, the benefits are nearly as marked. He gives the bath for from five to ten minutes, using, at the same time, gentle friction to the body surface. The bath is repeated as often as necessary to control symptoms and temperature. He has used it this way sometimes as often as every two or four hours for three or four days. If a bath tub is at hand the patient may be lowered into it, lying on a sheet, but in his cases an ordinary wash tub was employed. In order that the thermogenic process may not be interfered with seriously, it is necessary that the body be protected after coming out of the bath. Several cases are reported. (Journal of the American Medical Association, October 17, 1908.)

IODINE IN PERITONEAL SURGERY.

Dr. Vanverts suggests the use of Lugol's solution of iodine (iodine 1.20, potassium iodide 2.40, water 23.0), for promoting peritoneal adhesions in the surgery of the abdominal viscera. Experiments on animals showed that in this way the formation of adhesions can be greatly hastened. (International Journal of Surgery, October, 1908.)

NITRITES IN HÆMOPTYSIS.

Placak has found the use of amyl and sodium nitrites in controlling hæmoptysis most gratifying. They seem contraindicated in cases of erosion of a large vessel or the rupture of a small aneurism. The presence of a heart lesion seems to be no bar. The determination of the blood-pressure is a valuable aid in preventing and treating hæmoptysis. (Cleveland Medical Journal, July, 1908.)

OXYGEN, ITS INFLUENCE UPON WOUNDS AND INFECTIONS.

Dr. Burkhardt (Deutsche Zeitschrift für Chirurgie, Bd. xciii, Heft. 2) reports his investigations upon the influence of pure oxygen upon wounds and wound infections, and concludes as follows:

Contact with pure oxygen causes a marked arterial hyperæmia in the wounds, the surface remains moister, and the formation of granulations is promoted. While in artificial culture media the growth of facultative aerobic bacteria is much retarded by oxygen, in the animal body their growth is but little hindered, although their toxic power is slightly reduced. When oxygen is brought in contact with the peritoneum there is produced a mild imflammation or hyperleucocytosis, and in this way absorption is retarded. Ozone exerts a more powerful influence than oxygen, especially in the body cavities. (The Therapeutic Gazette, October 15, 1908.)

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PASSIVE HYPERÆMIA IN THE TREATMENT OF GONORRHŒAL ARTHRITIS OF THE LARGE JOINTS.

Dr. Baetzner (Deutsche Zeitschrift für Chirurgie) used Bier's hyperæmic method in the treatment of 40 cases of gonorrhœa of the large joints. He obtained pronounced results in all the cases who were treated early in the course of the disease. This was marked by a diminution and finally a complete disappearance of the pain, the disease was milder and shorter and the joints were able to be mobilized earlier than by any other method of treatment.

The technique of the treatment is simple and easy to apply. In the involvement of the wrist and elbow there is placed on the arm a thin transparent rubber band about 2½ inches broad, so that its turns almost cover the joint. The band is placed upon the thigh when the ankle or knee are involved. When the shoulder joint is involved a piece of soft rubber tube, sheathed with felt to avoid the bad effects of pressure, is applied around the shoulder so firmly that marked venous congestion of the arm occurs; then it is fastened with a clamp or by tying and is held in place by a bandage passing under the opposite arm. The constriction should always be of such a grade that the extremity shows a fiery-red œdema, and at the same time an easily palpable pulse. Pain and blue color in the part must always be avoided. This hyperæmia is continued twenty to twenty-two hours. The subsequent treatment consists of passive motion and massage.

Of those cases which presented themselves for treatment from two to three weeks after the onset of the disease, only nine out of twenty were completely cured, while the rest showed diminution in the function of the joint. Therapeutic Gazette, October 15, 1908.)

PHENOL: ITS VALUE IN TETANUS.

Dr. César Allievo, of Buenos Ayres, has obtained satisfactory results from the use of carbolic acid in the treatment of tetanus. He reports a case of tetanus in a middle-aged lady, who contracted this disease as a result of cutting a corn. She manifested all the symptoms associated with tetanus. The treatment consisted in injecting hypodermically a two per cent. solution of carbolic acid, followed by another injection the next morning. A dose was again repeated at 4 and 8 p. m. Although some of the symptoms such as trismus and contraction of the neck were alleviated, the headache and photophobia still remained. After continuing this treatment for 5 days all the distinctive symptoms of tetanus had disappeared. The author also cites a number of other cases which had been cured by this drug. (Lancet, October 3, 1908.)

REST: IMPORTANCE IN NON-OPERATIVE GYNECOLOGIC DISORDERS.

Dr. E. A. Weiss (Penna. Medical Journal) discusses rest as an important factor in the treatment of the various female disorders.

The more common instances where rest is required (1) in acute inflammatory conditions; (2) congestive pelvic disorders; (3) in certain displacements complicated by splanchnopotosis; (4) in nervous disorders referable to the pelvis, especially neurasthenia.

According to the indications rest may be (1) absolute, continuous rest in bed; (2) partial rest in bed; (3) rest at stated intervals; (4) rest with exercise, or (5) isolation.

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The modes in which rest exercises its beneficial effects are by decreasing the amount of blood sent to the part, and lessening of the force of circulation. Good results are obtained by the treatment of acute pelvic infections and the presence of pus by absolute rest. The bacteria and toxins disappear and the infection becomes less virulent. (Dietetic and Hygienic Gazette, October, 1908.)

SCOPOLAMINE-MORPHINE METHOD OF GIVING CHLOROFORM.

Dr. H. Macnaughton-Jones records a number of difficult and serious operations performed under the scopolamine-morphine-chloroform method of anæsthesia. The patient passes very quietly into narcosis which resembles a placid sleep and during the operation the patient remains in a most satisfactory condition. There is no fear concerning the low vitality and power to resist shock of the patient and there were no disagreeable post-operative effects.

In the majority of cases the author administered ⅙ gr. morphine and $\frac{1}{100}$ gr. scopolamine on the night before the operation. After emptying the bowel a second injection was administered. Then atropine and strychnine were given about one hour before the operation. In all cases the operations were performed under chloroform administered with a Vernon-Harcourt regulator. By this method less chloroform is required to produce the necessary anæsthesia. (British Medical Journal, September 19, 1908.)

SERUM DIAGNOSIS OF SYPHILIS.

W. J. Butler, Chicago, gives the history and describes the complement fixation test of Wassermann and reviews the literature of the serum diagnosis of syphilis. He holds that the large proportion of positive results in luetic and suspected luetic cases, and also the uniformly negative results in controls, indicate the specificity and reliability of the Wassermann test. Butler has used the test in 125 cases, but in 20 of these syphilis could reasonably be excluded, all of which reacted negatively. The other 105 are grouped under two heads, with subdivisions: 1. Cases of manifest or suspected syphilis and cases with a syphilitic history. 2. Cases with lesions of the nervous or cardiovascular system in which syphilis was neither acknowledged, denied, suspected or unsuspected. In the first division there were 61 cases; 4 in the primary stage: all positive; 25 in the secondary stage: 24 positive, 1 negative; 17 in the tertiary stage: 16 positive, 1 negative. Of latent cases, there were 15: 8 positive, 7 negative. In the second division there were 44 cases; positive reaction in 75 per cent. Of these, 40 per cent. had either no knowledge of infection or denied it. Butler summarizes his conclusions as follows: The serum reaction for syphilis is specific. It is found positive in from 90 per cent. to 95 per cent. of all cases with syphilitic manifestations. It is found positive in 50 to 60 per cent. of latent cases. It is found positive in from 70 to 80 per cent. of metasyphilitic and parasyphilitic diseases. In many cases the reaction is influenced by treatment of the patient and it is not improbable that this number would be greatly increased if the reaction were pursued throughout prolonged treatment. A positive reaction indicates activity of the specific virus, and is an indication for antiseptic treatment. While a positive reaction indicates syphilis, a negative reaction does not have an

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equal negative value. Its failure does not warrant any judgment as to cure. It is diagnostic of a systemic infection whether acquired or inherited and not an organ diagnostic measure. The reaction will be found of enormous advantage in differential diagnosis in every department of medicine. (Journal of the American Medical Association, September 5, 1908.)

SERUM IN THE TREATMENT OF CEREBRO-SPINAL MENINGITIS.

Dr. C. H. Dunn, of Boston, reports the results obtained by treating forty cases of cerebro-spinal meningitis by the injection of serum in the cerebro-spinal canal by lumbar puncture. Thirty-one cases recovered while nine died. The injections were repeated in relapsing cases and after each injection there were signs of improvement, and in the majority of the cases it changed the course of the disease. The routine amount given was 32 c.c., the maximum 45 c.c. (Medical Standard, October, 1908.)

SPINAL ANÆSTHESIA: ITS VALUE IN GYNECOLOGICAL LAPAROTOMIES.

Dr. E. Holzbach, Tübingen, reports 253 laparotomies. Lumbar anæsthesia was employed in 250. In three, deformity of the spine prevented successful puncture. The anæsthesia was not considered successful unless complete analgesia up to the umbilicus, muscular relaxation, freedom from sequelæ and no harmful influence on the post-operative course were all obtained. In three, 6 per cent. complete failure was recorded; in sixteen, 4 per cent. some inhalation narcosis had to be added (in most of these the operation lasted more than fifty minutes). The list of operations shows a great variety of major gynecological interventions. No serious accidents or sequelæ were noted. A slight transient albuminuria appeared in some patients. Three showed superficial necroses in the gluteal or perineal region. Pneumonia and bronchitis were entirely avoided.

The lumbar puncture should always be made by the same individual, thus assuring uniform technic. The needle should be connected with the syringe by a short rubber tube. This assures immobility of the needle during injection. Also, before injecting, if the piston of the syringe is pulled out a short distance, the tube remains unaltered if the needle is in the dural sac; if its point is among the nerve fibers the tube collapses. The stovain and suprarenin should be mixed immediately before injection. Changing to the Trendelenberg posture should be slowly made. (Der Wert der Rückenmarksanästhesie für die gynäkologischen Bauchoperationen; Muenchener Medizinische Wochenschrift, July 14, 1908.)

STROPHANTHINE, INTRAVENOUS INJECTIONS OF.

Prof. C. G. Santesson states that intravenous injections of strophanthus increase blood-pressure followed by a full and regular pulse. This highly beneficial effect was produced by the administration of strophanthine in grave cases of cardiac insufficiency. (Lancet, July 25, 1908.)

SUPRARENAL PREPARATIONS IN OBSTETRICS.

Dr. Neu, from a study of the effects of suprarenal preparations on the uterus, shows by experiments on the uterus of animals that this drug in the weakest concentration—1 or 5 to 20,000 parts—acts very energetically. It acts in two ways: first, by acting on the muscula-

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ture, and, secondly, on the blood-vessels of the uterus. In performing a Cæsarean section on animals after the injection of this drug, there was no loss of blood due to the vasoconstriction of the blood-vessels, and the preparation was found to act very much more powerfully and rapidly than the other uterine tonics such as ergot, etc. It acts instantaneously and brings about contraction of the uterine muscles which persists for some time, followed by a vigorous constriction of its blood-vessels. This action, therefore, makes the drug very beneficial in the treatment of acute hæmorrhage after expulsion and atony from inefficient labor. The injection is made at a point on the median line about two fingerbreadths below the umbilicus, pushing the needle through the abdominal wall into the uterine muscle, with care not to push it too far. The greatest precautions should be taken not to inject this preparation into a vein. (Bedentung des Suprarenins für die geburlshülfe, lxxxv, No. 3.)

USE OF POTASSIUM IODIDE IN THICKENING OF ARTERIAL WALLS.

Dr. J. H. Spitzly reports a case of arterial thickening in a male patient aged sixty-five. The patient complained of insomnia, muscular weakness and pain in the precordial region on the slightest exertion. After examining the patient he found the heart, lungs and urine normal, but further examination revealed thickening of the arterial walls which was plainly felt in the temporal and radial arteries. The patient was then put under the following treatment: four grains of a mixture of iodide and bromide of potassium three times daily, followed by hot foot baths before retiring. Under this treatment the patient began to improve and in a short time all his symptoms abandoned him and he was cured. (British Medical Journal, October 3, 1908.)

X-RAY TREATMENT OF TUBERCULOUS OSTEOPERIOSTITIS.

Dr. Paoli reports two cases of well-marked tuberculous periostitis which yielded very promptly to treatment by the application of the x-ray. The cases, before the treatment manifested swelling, pain and discharges from the sinuses. They were at first treated surgically but without avail. At last recourse was had to the x-ray. The applications were directed to the dorsal and palmar aspect of the finger at alternate sittings. It required about 30 applications to secure the desired results. (British Medical Journal, September 19, 1908.)

Book Reviews

A Text-book of Materia Medica, Pharmacology and Therapeutics. By George F. Butler, A.M., Ph.G., M.D., Professor and Head of Department of Therapeutics and Professor of Preventative and Clinical Medicine, Chicago College of Medicine and Surgery, Medicinal Department Valparaiso University; Physician to Frances E. Willard Hospital, etc. Sixth Edition, Thoroughly Revised and Enlarged and Adapted to the Eighth Revision (1905) of the U. S. Pharmacopœia. Philadelphia and London: W. B. Saunders Company, 1908.

In this new work, the author in considering the drugs includes their names, their source, their composition, their various preparations, physiologic action and methods of administration. He classifies the drugs by dividing them into those that act chiefly on the nervous system, circulatory organs, vaso-constrictors, those acting locally on micro-organisms (anti-

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septics), antipyretics and antipyretic analgesics, restoratives and alteratives, those acting chiefly on the gastro-intestinal organs, respiratory mucous membranes, uterus, kidneys, diaphoretics, mineral and vegetable astringents, topical remedies and animal extracts (Organotherapy).

In describing the physiological actions, the author describes the various actions of the drugs on the digestive, nervous, respiratory and circulatory systems separately, and in this way facilitates the study of their actions. The therapy is one of the best features of the book and for this aspect it is highly recommended. The new remedies are not dwelt upon. The arrangement of the subject matter throughout the book is most convenient and fulfills in every way the purpose for which it was written.

DISEASES OF CHILDREN. By William Nelson Mundy, M.D., Professor of Pediatrics in the Eclectic Medical Institute, Cincinnati, O. Second Revised Edition, Illustrated, Octavo, 512 Pages. Cloth, $3.00. The Scudder Brothers Co., Publishers, Cincinnati, O.

This book describes very intelligently and yet very concisely the diseases of children from the eclectic point of view. Therefore, the author uses different principles in the treatment of disease than the old or homœopathic school does. He says that each drug has a physiological and therapeutical action and it is the latter action that is desired.

The entire book is divided into three parts:—PART I.—Infantile Therapeutics; PART II.—Care and Management of Infants; PART III.—Diseases of Childhood.

The chapter deserving esteem is the one where he describes the various baths for the baby; how often they should be used; difficulties in nursing; food; weaning; sleeping and etc. The author brings out the important fact that by close observation one may notice certain furrows or lines which signify that that child is suffering from a serious disease, *i.e.*, the oculo-zygomatic, beginning at the inner corner of the eye and extending outward toward the cheek bone, passing beneath the lower lid, is indicative of a disease of the cerebro-spinal system and a number of others. The grouping of the diseases under their appropriate headings enables the busy practitioner and student to study and remember them more easily and so equip him to perform his duties successfully when he performs such work. The author gives confident results of therapeutic treatment and nothing superfluous is presented. The very latest views on the different fevers including their pathology are discussed. Indeed this book will prove indispensable to the student and busy practitioner.

THE CURE OF RUPTURE BY PARAFFIN INJECTIONS. By Charles C. Miller, M.D. Comprising a Description of a Method of Treatment Destined to Occupy an Important Place as a Cure for Rupture Owing to the Extreme Simplicity of the Technic and its Advantages from an Economic Standpoint. Chicago: Oak Printing Co., 9 Wendell Street, 1908.

This is a very small book consisting of 82 pages in which the author treats a very important subject. He reports ten cases of hernia which have been treated successfully by the paraffin injections. The methods employed, in performing this operation, the preparation of the paraffin, posture of patient for injection, effect of paraffin on the tissues, immediate after-effects of the paraffin injections, precautions used to prevent the throwing of the paraffin into the circulation, are described very concisely yet comprehensibly. The author states that the cases treated suffered no ill-consequences which compelled them to seek surgical aid.

A MANUAL OF CLINICAL DIAGNOSIS. By James Campbell Todd, Ph.B., M.D., Associate Professor of Pathology, Denver and Gross College of Medicine (University of Denver); Pathologist and Clinical Microscopist to Mercy, St. Anthony's and the Denver City and County Hospitals. Illustrated. Philadelphia and London: W. B. Saunders Company, 1908.

This work contains an account of the most important laboratory methods which are necessary for the purpose of clinical diagnosis. In the examination of the microscopic sections, much attention is directed to the best methods and to the significance of the substances found. The author describes and treats very concisely the normal and abnormal substances found in the sputum, urine and blood. This is followed by an interpretation of these findings.

In order to examine specimens to better advantage, the author in the introductory chapter describes the mechanism of the microscope and its proper manipulation. This work contains a complete account of the physical, chemical and microscopical examination of the sputum, urine, blood, gastric contents and fæces.

A majority of the examinations and tests are illustrated with colored plates which show the color reactions obtained and so impress the test better upon the mind. In the front part of the book there is a beautiful and highly instructive colored plate of the scale of urinary colors which deserves especial mention.

All the improved methods of staining and testing are given in the most practical form.

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A Text-book of Diseases of Women. By Charles B. Penrose, M.D., Ph.D., formerly Professor of Gynecology in the University of Pennsylvania; Surgeon to the Gynecean Hospital, Philadelphia. With 225 Illustrations. Sixth Edition, Revised. Philadelphia and London: W. B. Saunders Company, 1908.

The author has incorporated in this volume all the most recent advances and knowledge obtained in the treatment of diseases of women. The first chapter discusses the general causes of diseases of women, and this is followed in the next chapter by a description of the various methods of examination of the external genitals and pelvic structures. The various procedures necessary in the treatment of such diseases have been rendered much easier by the large number of original illustrations. The methods selected are those that require the least expenditure of time and the best and most simple instruments.

The author treats the subject in a very systematic way, and in the discussion of the various diseases he gives the symptoms in their order—the most important coming first. He gives one plan of treatment for each disease and so avoids confusion of the one who seeks such knowledge. Before discussing the disease of the perineum an entire chapter is devoted to the anatomy and mechanism of the female perineum, which is very essential to a clear understanding of the nature and treatment of injuries to this structure.

In the chapter devoted to disorders of menstruation the author states that nothing is known with any degree of certainty regarding the cause and significance of menstruation. He also states that it is probable that menstruation takes place without ovulation and that ovulation and conception may occur during the absence of menstruation. The account of the operative treatments are full and the author expresses his views with admirable clearness.

Obstetrics for Nurses. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School; Obstetrician to Mercy, Wesley, Provident, Cook County, and Chicago Lying-in Hospitals; Lecturer in the Nurses Training Schools of same. Third Edition, Thoroughly Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1908.

This volume combines the features of obstetrics for nurses and obstetric nursing. Very useful information is given and the work will prove a trustworthy guide to those who are engaged in caring for a woman during each period of the reproductive cycle.

The text is divided into three parts:—Part I.—Anatomy and Physiology of the Reproductive System. Part II.—Nursing During Labor and in the Puerperium. Part III.—The Pathology of Pregnancy, Labor, and the Puerperium.

Much space is devoted to the discussion of:—"Anatomy of the Female Generative Organs"; "Pregnancy, Labor and the Puerperium"; "The Hygiene of Pregnancy"; "Care During Labor"; "Care of the Child"; "Obstetric Operations"; "Obstetric Complications"; "The Disorders of the First Weeks of Life"; and "Care of Premature Infants."

The feature of unusual importance is the latest practice of infant feeding. The author describes the contra-indications to maternal nursing, substitutes of mother's milk and the quality of milk desired.

The nurse is taught the best methods to care for the woman during the normal and abnormal reproductive cycle, and what she should do in order to save the patient from the complications which may follow a normal labor.

Photographs illustrate almost every phase and so render a clear understanding of the methods employed.

Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. February 1, 1906 to February 1, 1907. Edited by Joseph Walsh, A.M., M.D., Published by The Henry Phipps Institute, 238 Pine Street, Philadelphia, 1908.

This report is an account of the general and special clinical and pathological work done by members of the staff at the institute during the year. The report is based upon data contained in the records of patients examined and treated. Throughout the book are numerous tables which give the required data and so show at a glance the results attained in the treatment of this white plague.

Some of the important subjects discussed are:—"The Importance of the Upper Respiratory Tract in the Etiology of Cryptogenetic Infections, especially in relation to Pleuritis"; "The Pleura in Pulmonary Tuberculosis"; "Tuberculosis of the Bones and Joints," etc.

These chapters expose all the latest and most recent advances made in the study, treatment and prevention of tuberculosis. A clinical report is given of a great number of patients and in this manner illustrate the facts thoroughly. This report is the experience of men who are famous and have established reputations in this work, and it records the demonstrated facts rather than the theory.

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Original Articles

Department in charge of J. MADISON TAYLOR, A.M., M.D.

CAUSES OF MORTALITY FROM HEART DISEASE IN THE UNITED STATES.

BY THOMAS DARLINGTON, M.D.,
Commissioner of Health, New York City.

DURING the past decade, one of the most important points which has thrust itself forward, compelling the attention of health officials, recorders of vital statistics, and the medical profession at large, has been the persistent increase in the mortality rate from diseases of the heart. I have advisedly used the terms "compelling" as descriptive of the manner in which this important matter has forced itself upon our notice. Public health officials have had their functions seemingly circumscribed by those diseases which fall within the class of infectious, contagious or communicable maladies, but I take it that the spirit, if not the letter, of the law requires a wider view of their functions. It is true that health boards may have cause for self-congratulation in the fact that this increased death rate relates to a disease with which, in their official capacity, they have no concern, and that the diseases under their control have shown a steady and persistent decrease in their occurrence and mortality rate, but this very fact would seem to afford the greatest argument in favor of a more widespread and systematic observance of those diseases which now fall without the pale of organized medical authority. The non-communicability of heart disease may afford sufficient reasons for the non-reporting of the cases, and the time may never arrive when the enforcement of such a measure will appear advisable, but the knowledge of the serious situation which exists in the increasing prevalence of heart disease affords a sufficient reason for its requisition on a large scale; widely disseminated knowledge

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as to the cause of heart disease, and information regarding its prevention are needed at the present time quite as acutely as similar information regarding the communicable diseases. That this knowledge and information is not now available is apparent. This symposium is a needed outlet for the ideas we may hold regarding this important matter. The public looks to the medical profession for relief, and we of the profession must show ourselves worthy of the implied trust.

The true solution has not yet been reached, else there were no need of further discussion, and the present-day condition of our knowledge on the subject is such that no dogmatic statement may be made. Difficulty should be inspiration, and any and all effort which tends to the alleviation of disease is service of high aim and worthy purpose.

The situation in regard to the increase in mortality from heart disease urgently demands attention. In my address as President before this Association at its last annual meeting, I stated in detail the conditions as they then existed in various cities of the United States. These statistics showed an increase in mortality from diseases of the heart which apparently had little bearing on the question of locality. A few cities showed no increase, and a limited minority gave a slight decrease. In order to ascertain exact conditions, and a statement of opinion from those officials in each locality who might be assumed to speak with authority in regard to the situation within his own domain, I sent the following set of questions to the health officers of prominent cities in this country. The territory covered reached from California in the West to Maine in the East, and from Montreal, Canada, in the North, to Louisiana in the South. Montreal was taken because it afforded the best standard for a northern climate, although, strictly speaking, it came without the limit of our inquiry. As an interesting side light on the subject, the inquiries were also sent to the health officer of the Hawaiian Islands. The questions were as follows:

First.—Death rates in your city from organic heart disease, 1892-1902-1907.

Second.—Death rates in your city from diseases of the kidneys, 1892-1902-1907.

Third.—Has there been a relative increase in the death rate from any other disease? If so, kindly name disease, and state increase and cause.

Fourth.—What, in your opinion, is the cause of the increased mortality from heart disease in your city and locality?

Fifth.—Has there been an increase in the prevalence of, and the death rate from, influenza, and if so, has this increase seemed to bear any relation to the deaths from organic heart disease?

Sixth.—Has the general death rate increased or decreased during the past five years? Kindly give figures.

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TABLE I.

DEATH RATE IN CITIES FROM HEART AND KIDNEY DISEASE PER 10,000 POPULATION.

	Heart Disease.	*Kidney Disease.*		*Heart Disease.*	*Kidney Disease.*
Minneapolis, Minn.			Chicago, Ill.		
1892	4.70	3.30	1892	8.82	5.08
1907	6.70	6.30	1906	10.71	10.38
St. Paul, Minn.			Reading, Pa.		
1892	4.53	1.13	1892	13.98	1.61
1907	8.61	6.38	1907	16.00	7.33
Milwaukee, Wis.			Cincinnati, Ohio.		
1894	5.93	3.19	1892	9.96	4.07
1907	11.05	6.05	1906	16.47	9.16
Buffalo, N. Y.			Washington, D. C.		
1892	8.59	4.56	1892	12.50	7.15
1907	9.00	5.80	1907	14.89	15.21
Boston, Mass.			Los Angeles, Cal.		
1892	19.07	7.40	1892	11.69	8.00
1907	18.56	10.46	1907	18.44	10.40
Lawrence, Mass.			Sacramento, Cal.		
1892	11.12	2.30	1895	9.33	2.00
1907	14.41	9.74	1897	9.50	1.50
Providence, R. I.			Denver, Col.		
1891	14.80	9.60	1895	6.00	4.21
1907	17.10	12.90	1898	8.86	5.27
Portland, Me.			Omaha, Neb.		
1892	12.79		1893	4.40	1.61
1907	18.90		1897	3.80	1.80
Concord, N. H.			Atlanta, Ga.		
1892	7.29	2.60	1893	7.95	1.93
1907	11.85	4.44	1900	6.34	2.44
New York City, N. Y.			New Orleans, La.		
1892	13.64	14.02	1892	20.20	10.80
1907	16.89	13.27	1907	26.20	14.00
Philadelphia, Pa.			Nashville, Tenn.		
1892	14.70	8.10	1893	8.55	4.50
1907	17.80	16.40	1906	15.60	10.30
Montreal, Canada.			Macon, Ga.		
1892	4.66	1.96	1892	4.64	3.22
1907	4.56	3.23	1894	4.29	3.57
St. Louis, Mo.			Honolulu, Hawaii.		
1892	10.96	6.07	1892	12.20	.70
1906	16.69	11.63	1907	10.10	10.40

I wish to acknowledge my indebtedness to the gentlemen who so graciously and painstakingly answered my inquiries. The results are instructive, and even if they do not arrive at a solution of this vexed question, at least they give us at first-hand the data which should help us in our task.

I consider the answers received of sufficient importance to warrant the taking up of the inquiries in order, and have endeavored to so group the replies that they may be productive of the greatest value.

In answer to the questions, we first find the increased mortality from heart disease to be general in its distribution. Starting with the Northern group of cities, we find that in the mortality rate from heart disease Minneapolis, St. Paul, Milwaukee, Detroit, Buffalo, Boston, Lawrence, Portland, Maine, Concord, Providence, R. I., and New York City all show an increase, while Montreal, Canada, gives a slight decrease in its rate from this disease. Of the Middle State cities, Philadelphia, St. Louis, Chicago, Cincinnati, Reading and Washington are in the same class. Farther to the West, Los Angeles has the

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greatest increase. In contrast to Sacramento, where the increase is slight, Denver shows the same upward tendency, while Omaha, Nebraska, gives a decreased rate. In the South, Atlanta and Macon, Ga., both show a decrease, while Nashville, Tenn., has practically doubled its rate, and New Orleans not only gives the most persistently high death rate, but has a persistent upward trend. As further and more definite statistics concerning the States themselves are not yet available, I wish to quote to you from my address before you delivered last year.

"The mortality statistics of the Census Bureau for the five-year period from 1901 to 1905, inclusive, covering the States of Connecticut, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, and Vermont, show an average general increase in the death rate from heart disease of 2.05 per 10,000 population, an average general increase in the death rate from Bright's disease of 1.31 per 10,000 population. The increase has been general throughout all of these States, New Hampshire showing the greatest combined increase, with Massachusetts a close second. The highest death rate from heart disease is shown by Massachusetts, with a rate of 18.47, while New Hampshire has a rate of 18.25. Indiana has the lowest rate from both diseases—10.26 in heart disease, and 5.73 in Bright's."

That this increase is real, and not apparent, may be deduced from two important factors which bear upon the matter.

First, the increasing tendency of health boards throughout the country to refuse to accept death certificates which ascribe "heart failure" alone as the cause of death, a procedure which must necessarily limit the vast number of cases which formerly were included under the heading of heart disease.

Second, the realization that kidney disease bears an important relation to diseases of the heart, and the consequent reporting of many deaths as due to kidney affections which were formerly listed under the heading of heart disease. Reference to the table will show that in practically every instance this co-related disease has kept pace in the ascending scale with cardiac affections, and in some instances, notably, New York, Chicago, New Orleans, Philadelphia, Lawrence, Buffalo, Minneapolis, St. Paul and Concord, has increased at a greater ratio than the latter affection. Montreal, while giving a decrease from heart disease, has, at the same time, risen in its kidney rate from 1.96 to 3.23 per 10,000 population.

A corresponding increase in the death rate from other diseases is only noted in a few instances. In Minneapolis, Chicago, and throughout the State of Massachusetts, cancer shows an increased death rate, while Los Angeles, California, gives the startling and concomitant rise in deaths from diseases of the nervous system from 2.90 in 1902 to 18.36 in 1907. The State of Maine has had an increase in the death rates from measles, cancer, diabetes, apoplexy and diseases of the digestive system during this period of time. Excepting, however, the case of Los Angeles, none of these decreases and increases would seem to bear any etiological relation to the diseases of the heart.

The relation of influenza to this problem seemed of sufficient importance to warrant its separate consideration, and it was therefore made the basis of

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special inquiry. The results were disappointing, and of little avail in our search. Influenza, *per se*, must either have a low death rate or be overshadowed as a cause of death by some intercurrent complication. I have been unable to find a city where it is considered as a reportable infectious disease, and data regarding it is therefore exceedingly difficult to obtain. The health officials of Chicago believe that its increase has an influence in this direction. Comparing the death rates of two eighteen-year periods, 1872-89 and 1890-07, the per cent. of increase is 65.3 in pneumonia, 59.8 in diseases of the heart, and 140.9 in diseases of the kidneys. They state that in 1890 influenza became a factor in the city's mortality rate. In that, and the succeeding years, it was unusually prevalent, and that much of the increase in the death rate from pneumonia, heart and kidney diseases is attributed to the malign influence of influenza.

In New York City, up to and including 1890, the death rate from influenza kept pace with the death rate from heart disease, but since that date the death rates would seem to bear little relation to each other. In order to ascertain what definite bearing it may have on this matter, a more exhaustive inquiry must be instituted than seems possible with the present methods of information. The answers to the question regarding its relation to the increase in deaths from heart disease were wholly in the negative, with the exception of that of Chicago, which is quoted above, and Brocton, Mass., where an increase in its relation to the total death rate of from .40 per cent. in 1902 to 1.47 per cent. in 1907, afforded basis for an expression of opinion that its increase bore a direct relation to the increase in the death rate from diseases of the heart.

During this period of augmentation of the cardiac death rate, the decrease in the general death rate has been contrastingly exhibited. It has been well-nigh universal and is a splendid tribute to the efficacy of the forces at work in the line of preventive medicine and sanitation.

Before leaving these statements of fact and entering upon what must be the realm of theory, and yet is what I take to be the more important part of the subject assigned to me, I wish to call attention to the state of affairs relating to this matter which exist in our Pacific island, Hawaii. In reply to my letter, the health officer of Honolulu tells me that the death rate from heart disease in that city has fallen from 12.20 in 1892 to 10.10 in 1907. Deaths from kidney disease have shown an increase from .74 in 1892 to 10.43 in 1907, while the general death rate shows a slight increase. The increase in the kidney death rate is undoubtedly due to more accurate diagnosis and more stringent regulations in the matter of vital statistics, factors that act well in their relation to the cardiac death-rate, and which, therefore, make the decrease in the latter more worthy of notice. Influenza does not exist in this semi-tropical climate, and the health officer ventures the opinion, well in line with what I take to be our belief, that the decrease in the cardiac death-rate is due, in part, to the fact that the inhabitants of that island, being largely of Oriental extraction, are rather stoic, and do not live under the conditions of nervous tension so strikingly a part of our national existence.

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This thought naturally brings me to the consideration of my fourth question. I have left this to the last to be analyzed, as its discussion is of such vital importance. The cause of the increased mortality from heart disease is the crucial point of the investigation, the *sine qua non* of our labors, yet this question of extreme moment was either left unanswered or met with a frank "I don't know." "The strenuous life," as a reason, was put forward by three officials, the modern tendency to indulge to excess in athletic sports that tend to overtax, was mentioned. Influenza had two advocates, while the influx of old people and incorrect reports or diagnosis was held to explain the increase in one city.

That the problem is exceedingly difficult, I admit; that it does not allow of at least a partial solution, I deny, and, above all, I emphatically insist that we must arouse ourselves to its importance. Mere evasion, indifference or ignorance can no longer be accepted.

In the light of this non-committal attitude on the part of the majority of the official guardians of health conditions, I would be little short of heroic in assuming that I could offer you a solution of the problem, yet my feeling is strong that the apparent unwillingness to be quoted is simply on the ground that a short and definite answer is impossible. Undoubtedly, in the final analysis, it will be found that there is little difference of opinion as to the fundamental causative factors, and that the desired result will be obtained when we attain the full measure of our calling as teachers of preventive medicine, as well as therapeutic advocates.

Idiopathic organic heart disease is rare. Organic heart disease as a result of, or sequelæ to, many other diseases is a matter of common medical knowledge. The classical causes are well-known, and need not be here enumerated. It is not the occurrence of this condition, deplorable though it be, that presents itself for our consideration, but our concern should chiefly lie in combating its stealthy and persistent increase in spite of the better knowledge we possess regarding the prevention, treatment and gradual elimination of other diseases.

That the increase is not dependent upon climatic conditions is clearly shown by the statistics presented for your consideration. That the infectious diseases cannot be held responsible is equally true. The increase continues, notwithstanding the fact that the whole death rate shows a universal downward trend. Tuberculosis is being held in check and gradually eliminated, and pneumonia, though still unduly prevalent, is being met by an increasing familiarity with its etiology.

We must search deeper for the underlying causes of this menace. The temperamental strain which makes up what is called the "American Spirit of Progress" has resulted in achievements incomparable in the history of the world. During the early years of our national life, physical labor was the rule, and essential in the upbuilding of the country; but with it, hand-in-hand, went the normal and wholesome conditions of living imposed by the limitations of a young country and the virile qualifications inherent in the hardy settler. A century ago our method of living had changed little, except in the addition of the comforts and luxuries which national and individual prosperity afforded.

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Life was still wholesome and normal in its larger outlook. Then, with the advent of what we are pleased to call the concomitant attributes of civilization, came the age of social and mental unrest, vast commercial opportunities and competition. We are paying our prices for our social and material advancement. Physically, we indeed need rugged constitutions to hold us up in the pace we are traveling. Individually, we have undermined the vigorous health which was characteristic of our forefathers, and we are bringing into the world children whose physical status is even less hardy than our own. Out of 275,000 children examined in the public schools of New York City, over 70 per cent. were found to be suffering from some physical abnormality—all handicapped at the very beginning of their life struggle, and of these children nearly 3,500 had heart disease in some form. I feel confident that such conditions did not exist fifty years ago, but now New York is no exception in this regard. There is a wide gulf between the "three R's" which were taught in the country school at that time, and the extensive and overburdening system of education now placed before the children. Economic conditions of to-day are also bearing hard upon their physical well-being.

Dr. Jarrett, one of the examiners of applicants for teaching licenses before the New York City Board of Education, has in a recent article offered an explanation of the physical disability shown by many applicants who present themselves for examination at the close of their school life. The story of the boy or girl obtaining their education at the expense of family sacrifice, insufficient nourishment, late hours of study, deprivation and even actual want, is only too common, and the effects of these conditions is shown in various physical abnormalities, notably heart lesions. Ambition thus satisfied is only attained at the great cost of physical degeneracy, and ultimate success is either denied or of little use to the victim.

Children acquire, by subtle inference, the thought that the ultimate measure of gain is the acquisition of the "almighty dollar." With such a goal, the race starts early in life, and competition is the relentless pace-maker. The striving to be first in school, at play, and in business, is a worthy motive when properly restricted, and when the result can be reached without sacrifice of health; but of what value is it to outdistance our fellow-man and in so doing lose our own birthright of physical vigor? Clean and wholesome competition is to be commended; without it economic and mental stagnation would ensue, but competition run riot and the mad, unrestricted struggle for front place in the ranks of worldly success brings in its train a host of physical ills which more than counterbalance the economic gains. During the past two years, in New York City, 1,234 children have died from heart disease during that time of life which we may call the formative period, or the age of scholastic education. Is it not instructive to note that only 131 of the deaths occurred under five years of age? With the beginning of school life, the rate increased rapidly, from 28 deaths at the age of four years to 286 at the age of 15 years.

In this connection we must take account of the modern tendency to overindulgence in athletic sports. It is well known that overactivity in this direction, with the physical strain resulting from keenly contested games, leaves

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its imprint on the physical status of the immature or underdeveloped youth. Insurance companies consider athletes "poor risks," and this attitude is well grounded. It would seem that the medical profession might well take cognizance of this matter to ascertain what bearing it has, if any, upon this question of the increase in the prevalence of, and death rate from, heart disease.

According to our statistics in New York City, which may be taken as representative of the larger cities of this country, the rise in the death rate continues steadily to increase during the succeeding years of life, until it reaches its maximum at 60 years.

In childhood, as in adult life, heart disease holds no brief either for the rich or the poor; the grind of poverty and the enslavement of wealth are equally responsible. Poverty, with its never-ending struggle to make ends meet, lack of proper and nourishing food, neglect of hygienic laws, ill-paid and exhausting toil, insufficient protection from the hardships of existence, overcrowded, unventilated and unsanitary living quarters, hard manual labor and the general struggle for the wherewithal to keep body and soul together, is offset by *wealth*, with all that it entails in its acquirement and retention, its responsibilities and demands, the desire for social advancement attained by the woman at the cost of nerve-racking expenditure of energy, and by the man at the price of hazardous undertakings in order to finance the game, the mental strain involved in the management and evolution of gigantic business enterprises, and the insatiable demand for financial supremacy at all risks and costs.

Although statistics bearing upon a further point are difficult to obtain, yet those available show that our rural communities are almost, if not quite, keeping pace with our cities in this regard.

TABLE II.

DEATH RATES IN STATES FROM HEART AND KIDNEY DISEASE PER 10,000 POPULATION.

	Heart Disease.		*Kidney Disease.*	
Maine.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	16.7	14.3	12.26	7.20
1906	16.5	15.7		
Massachusetts.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	15.0	16.0	7.65	6.75
1906	15.7	20.1	8.35	8.87
Connecticut.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	12.27	15.33	9.25	9.13
1906	13.98	16.64	10.50	8.50
New Hampshire.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	13.48	17.06	6.61	8.74
1906	17.11	19.83	9.92	11.44
Vermont.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	10.66	13.37	8.10	8.08
1906	14.13	18.90	7.91	9.38
Michigan.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	12.26	12.08	5.64	5.08
1906	13.01	15.54	7.32	8.87
Indiana.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	9.03	7.16	6.60	4.75
1906	10.50	9.71	13.11	8.85
New York.	**Cities.**	**Rural.**	**Cities.**	**Rural.**
1902	11.40	15.43	13.65	8.10
1906	13.57	17.45	14.97	8.09

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	Heart Disease.		*Kidney Disease.*	
New Jersey.	Cities.	Rural.	Cities.	Rural.
1902	11.23	11.33	11.03	7.83
1906	11.75	12.20	11.04	8.70
Rhode Island.	Cities.	Rural.	Cities.	Rural.
1902	14.04	13.53	11.66	11.75
1906	14.34	22.73	11.63	18.53

A study of the conditions obtaining in those ten States where vital statistics on this subject were obtainable show that in the rural districts, excluding all cities, the cardiac death rate has shown a persistent increase equal to and, in some cases, exceeding that of the cities themselves. This is notably shown in the State of Massachusetts, where the cardiac death rate in the rural districts has risen from 16.0 in 1902 to 20.1 in 1906. In Vermont, where the increase ranged from 13.37 in 1902 to 18.90 in 1906, and Rhode Island, showing 13.53 in 1902 and 22.73 in 1906. In these three States the rise in the city death rate was not so great as that of the rural communities.

Taking these figures as a basis of comparison, we cannot assume that mere congestion of population is a basic cause of the ascending scale. Rural communities are not exempt from the complexities of modern tendencies. The farmer and small dealer in the towns face the same conditions that harass the city man. The farmer's wife may expend the same amount of mental and physical energy in meeting the increasing difficulties of her position as her city sister wastes in her efforts to keep in the social swim, and on either side is the burning of the candle of life at both ends in order to meet the increased demands of modern existence, and reach the coveted goal of social and economic supremacy.

Rheumatism and alcoholism must not be overlooked in our study of this subject. They are cited with consistent regularity as the immediate cause of heart disease. Are we not, however, unthinking and careless in our search for fundamental facts when we allow ourselves to limit our investigation at this point? We have no definite data to support a theory that rheumatism is more prevalent than formerly, while the manifest importance of the wave of "prohibition," which is spreading over the country, is evidence tending to show the lessening extent of alcoholic indulgence. That these conditions do, however, exist is undisputed, but that they are factors in increasing the cardiac death rate beyond its former limits is indisputable. Granting, however, that they have an important aspect in the consideration of etiology, may we not go farther back and consider the causes which lead to these conditions? Discarding the enmeshing set of theories which are advocated as the primal root of rheumatic affections, we are safe in assuming that exposure to the elements, lack of proper nourishment, and overindulgence in alcoholic drinks and rich foods are contributory causes, and these factors are all parts of the life led by us at the present time, and dependent upon modern economic conditions. Alcoholism, waiving an occasional inherited trait, may be traced in the same manner. Whether it be the overindulgence inspired by the wish to forget material hardships or sorrows, or the stimulation considered essential in spur-

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ring one on to the repeated endeavor, the mere fact of its occurrence is potential.

In this regard it may be of interest to note a series of answers received in response to inquiries addressed to a number of physicians regarding the cause of the heart disease in specified instances where the death certificate stated such to be the immediate cause of death. This inquiry, sent to 100 New York City physicians, elicited replies which may be roughly classified as follows:

Rheumatism	39	Congenital	1
Alcoholism	11	Miscellaneous, including influenza (1), asthma (1), abortion (2), hemiplegia (1), epilepsy (1), syphilis (1), occupation (1), indigestion (1), obesity (1), and chronic bronchitis (2)	12
Alcoholism and rheumatism	5		
Nephritis	10		
Strain incident to occupation	12		
Senility	7		
Pneumonia	3		

The attacks of rheumatism, nephritis, and pneumonia cited were usually of long-standing duration, or represented early or frequent attacks, the onset of the heart lesion, in many instances, being traced to a considerable time before the fatal termination. Alcoholism was given as chronic and excessive in each instance.

The occupations noted were divided as follows: (1) Conductor on motor car for 30 years; (2) Butcher, working from 1 A. M. to 5 P. M., and lifting heavy weights; (3) Porter; (4) Piano mover, also alcoholic; (5) Blacksmith; (6) Watchmaker, constant worker, never took a vacation, business reverses and mental strain; (7) Laundress; (8) Laundress, with rheumatism and asthma; (9) Housemaid; (10) Hard work, kind not mentioned; (11) Alcoholic, and (12) Gas collector. By what process of reasoning the last occupation could cause heart disease is implied rather than expressed.

The miscellaneous causes given are almost too vague to have any definite value, and in only one instance, the case of the watchmaker whom I have mentioned, was mental strain considered of sufficient importance to be recorded.

I have given you the list of answers, not because I consider them as offering any aid in the solution of this vexed question, but because of the lesson they bring as to the superficial methods used in dealing with this matter. Without in any way reflecting upon the sincerity and honesty of purpose of the gentlemen who have so kindly placed this data at my disposal, I would yet reiterate that apparent causes must not be regarded as real until all the factors bearing upon the case have been subjected to a thorough analysis.

To briefly recapitulate the impressions gained from this study and to afford a working basis for future investigation, we must consider:

First.—That the mortality rate from heart disease is steadily increasing.

Second.—That this increase is general throughout the United States, and is apparently unaffected by climatic conditions, locality, or density of population.

Third.—That the co-related condition, chronic Bright's disease, shows a corresponding increase in mortality.

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Fourth.—That the general death rate is steadily decreasing.

Fifth.—That no other disease shows a general relative increase in its death rate.

Sixth.—That the commonly accepted causes of cardiac affections cannot be held responsible for the increased death rate without further study of their etiology.

Seventh.—That the effect produced by high strung nervous tension, induced by modern methods of social and business competition, must be regarded as a causative factor in the production of functional and ultimately organic cardiac disease.

Eighth.—That the medical profession has before it an opportunity of great vital moment in teaching the doctrine of right living, advocating a saner and more wholesome attitude towards life, and standing as a unit against the false standards of material gain and advancement obtained by the sacrifice of the normal, healthful and peaceful attributes of calm mental poise, equable temperament and physical well-being. These latter bring with them the joy of the life lived in its fullest and highest expression.

Osler, the master mind in medicine, has given to its profession its master word, and in it is held, if not entirely, at least partially, the solution of our difficulty.

"Equanimity" is the need of the times and the need of the people. Let us teach it, let us live according to its law. In calmness of mind and evenness of purpose we may find the panacea the world is seeking to combat, the ills arising from mental and physical unrest.

TUBERCULOSIS IN THE INSANE.[1]

By FRANK WOODBURY, M.D.,
Secretary to the Committee on Lunacy of the State Board of Public Charities of Pennsylvania.

ALTHOUGH only a few years ago phthisical insanity was regarded as a distinct form of mental disease, it is regarded so no longer, and may now be finally discarded. There is no special form of insanity in connection with phthisis which requires distinct designation. Tuberculosis of the lungs, according to present views, co-exists with mental disorder merely by virtue of the accident of infection with the tubercle bacillus. The time of this infection, or, more properly of the appearance of the clinical evidences of infection, taken in relation to the period of the beginning of mental disturbance, affords the means of recognizing two classes among the tuberculous insane: (1) Those in whom the pulmonary symptoms antedate the insanity, and (2) those in whom the insanity develops before the pulmonary disease.

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[1] Read at the Annual Meeting of the American Therapeutic Society, May 9, 1908.

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Group 1. With regard to the first class, in which the consumptive patient develops mental disorder and has permanent delusions or hallucinations, it may be very properly said that the insanity is an epiphenomenon to the phthisis. It is, in this case, in its pathology, closely related to the ordinary condition of delirium, which appears in many febrile diseases and in some instances without fever. It may be urged that there already may have been a predisposition to insanity in the affected individual, but even so, the tubercular infection does not act specifically in producing the mental disorder. It is a well-known fact that, in a case potentially insane, anything which depresses the vitality and makes the ordinary daily work of the individual more difficult to perform, may cause the mental breakdown. Tuberculosis, however, does not produce a special form of insanity. In some cases, it is true, the realization by the patients of the fact that they are victims of the great white plague, and the influence of the fear that they may convey the infection to their loved ones, and also the horror of becoming helpless and dependent invalids, all conspire to produce great depression of spirits, a condition, in fact, which is scarcely distinguishable from melancholia. Some patients may, and often do attempt, to commit suicide during an outburst of despair and recklessness. It is to be noticed that such patients, when treated by modern methods, may entirely recover their physical health, and, with its return, their minds become more rational and cheerful, and they can be restored sound and sane to their families and to society. It seems to me scarcely justifiable, however, to classify such cases among the insane, any more than we should an attack of delirium, or of "the horrors" after prolonged indulgence in alcohol.

By accident, or mere coincidence, an individual having the insane mental make-up, may acquire tuberculosis which develops the latent predisposition, and active insanity, of almost any type, may appear. In these, the disease of the lungs may be cured; but the insanity may persist. The former has no special causal relation to the latter, but it merely happens to be one of many general predisposing causes which might have contributed to produce the same effect.

In the cases already mentioned in which the insanity takes the place of delirium—and, in fact, is a chronic delirium—the clinical history is the ordinary one of phthisis, and has no special interest from the standpoint of the alienist. In the other cases, in which there is the insane predisposition which happens to be developed during the progress of the pulmonary disease, the course is the same as that of the second group, which will now be considered.

Group 2. The patients in which the insanity develops and is recognized before the pulmonary symptoms appear are those which are especially to be considered under the title of "Tuberculosis in the Insane."

Under ordinary circumstances, the pathology and clinical course of the disease of the lungs is not different in the insane from what it is in the sane. That is to say, in the insane patient treated at home who becomes tuberculous, it pursues its course as it does in the sane patient, with unimportant individual

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differences which need not be discussed. But when we come to consider the case of the insane patient, who is not kept at home, but is under special treatment in a large modern institution for the insane, a more hopeful outlook is presented. This is especially the case, since the State authorities undertook systematically to check the progress of phthisis, under the energetic administration of Dr. Samuel H. Dixon, the Commissioner for Health of Pennsylvania. His suggestions as to the treatment as regards isolation, feeding, and fresh air have been received with much enthusiasm by the medical superintendents of our large hospitals, and have been carried out faithfully as far as possible. To show what is now the prevailing method of treating the tubercular insane in Pennsylvania I will read a few letters, which I have recently received from some of the medical superintendents of our principal State hospitals for the insane.

Dr. Orth, of the Pennsylvania State Lunatic Hospital, at Harrisburg, under date of February 17, 1908, writes as follows:

MY DEAR SIR:

In reply to yours in regard to the management of our tubercular insane patients, I beg leave to say that it is based upon the well recognized principles required for the care of all infectious diseases: isolation from other patients in rooms with walls and floors impervious to moisture; with large cubic air space, 1100 cubic feet per patient; plenty of light; free ventilation without opening windows; cleanliness; careful feeding, sterilization on destruction of everything used for clothing or bedding.

Our infirmary wards are diamond shaped, all in one story in height, one for men and one for women, connected at apices by a congregate dining-room facing south by west; the opposite apices of these diamonds are cut off from the general wards by broad corridors, and two isolation rooms, 13,000 cubic feet capacity, are arranged for twelve patients each, the walls of which are smooth finished in sand and lime, the floor covered with long-grained Georgia pine, first saturated with oil, then rendered impervious to water with repeated coats of wax and paraffine dissolved in turpentine. The floors are redressed weekly.

For light: "Thorne Thornes" greatest glass area is used, viz.: one square foot to every 60 cubic feet of space.

Ventilation: Air is drawn from room through openings in the wall six inches above the floor into shafts provided with hot steam coils that open through the roof of buildings, and changes every fifteen minutes without opening of windows.

Cleanliness: Prompt removal and disinfection of all discharges.

Careful feeding.

Rest in bed.

All bed and other clothing is kept isolated and is sterilized before washing.

Every patient when admitted is carefully examined and all patients are under continuous observation, so that any disease may be discovered in the incipiency. When tuberculosis is noted (if possible) they are at once isolated. Open-air treatment is not used, for those patients to whom it would be of special benefit, viz.: in the earliest stages, require such custodial care as cannot be given them in open camps; in the later stages of the disease when their strength is so diminished that they become helpless, they can be cared for and benefited more in our infirmary than under tents.

Our death rate for the year ending September 30, 1907, was but 4½ per thousand, or less than half of .01 on patients treated in hospital.

Dr. Morris S. Guth, Superintendent of the State Hospital for the Insane, at Warren, under date of February 12, 1908, writes as follows:

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MY DEAR DOCTOR:

In reply to your request for information regarding our tubercular patients, would say that the sputum of any suspected person is microscopically examined by our pathologist. In case the result of the examination is positive, the patient is at once transferred to our tubercular infirmary, a detached building standing at some distance from any of the others. The lower floor of this infirmary is occupied by men and the upper floor by women, and the entire building is in charge of women nurses. Some of the stronger men patients assist in bathing the others and in performing similar duties. The women who are able assist in the housework. The general plan of the building is a few small rooms where excited patients may be secluded, dining-room, kitchen, clothes-room and linen closet, bath-rooms, and two large wards with windows on three sides, and a solarium opening out of each. These solariums are semi-circular in shape and the sides are glass. Those patients who are able to be out of bed sit here. Paper sputum cups, which may be burnt, are used. All clothing, bedding, etc., are disinfected and washed separately. It is our endeavor to keep floors, walls, etc., absolutely clean. The diet consists to a large extent of milk, eggs, beef, etc.

Most of our tubercular patients are well past middle age, and generally speaking their mental affections have altered their manner of life so that we do not look for many recoveries. It is our aim to isolate the sufferer, thus preventing the spread of the disease, and to prolong his life by providing an abundance of fresh air and nourishing food.

The medical treatment varies according to the patient.

While we are constantly on the look-out for tuberculosis among our people, yet we find by post-mortem examination that it is present in many cases which do not exhibit any characteristic symptoms, and who die from other causes.

Dr. H. B. Meredith, Superintendent of the State Hospital for the Insane, at Danville, under date of February 20, 1908, writes as follows:

DEAR SIR:

In reply to yours in regard to the management of tubercular patients, I am sorry to say that no special treatment for phthisical cases has been instituted in this institution. As a matter of fact, we have never had many cases at a time, at present there being nominally eight men and six women affected with the disease. The new infirmary building for women may provide room for this class, but I believe the tent life more desirable, and fear we will have to await such time as we can procure suitable buildings for the purpose.

Dr. W. W. Richardson, Superintendent of the State Hospital for the Insane, at Norristown, under date of February 11, 1908, writes as follows:

DEAR DOCTOR:

In reply to your letter concerning our management of tubercular patients in the male department of this hospital, I wish to state that we have a special cottage built for that purpose to care for this class of patients.

I have increased the capacity of this cottage from 24 to 46 patients during the past year, and it is kept full all the time.

We have a small porch attached to the cottage where we can accommodate four or five bed-ridden cases continuously. We give them the maximum amount of fresh air, as our dormitories are very well ventilated.

During the summer, patients who are able to be kept up and about, are out of doors practically continuously.

A careful record of the weight of all patients is kept, and the temperatures are also recorded wherever the patients are carrying a temperature above normal.

Whenever any of the men are too destructive to be taken to this cottage, they

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are isolated in rooms in the main buildings, and thus kept away from other patients. The tubercular cottage is in charge of female nurses.

Milk and eggs constitute the main part of the diet, and they receive only one large meal a day, milk and eggs being substituted for the other meals in the main.

Dr. Mary M. Wolfe, Superintendent of the State Hospital for the Insane, under date of February 11, 1908, writes as follows:

DEAR DOCTOR:

Your communication concerning the management of tuberculosis in this institution has been received.

I would state that since May, 1899, the tubercular patients of the women's department of this hospital have been isolated in a separate cottage on the grounds of this institution. They have had their own portion of the grounds fenced off for them, and have not been permitted to associate with other patients. As to the care of these patients, we try to give them as much fresh air, both day and night, as we possibly can arrange to give them, although our present porch space in connection with our cottage is entirely inadequate for the best care and treatment, so far as fresh air is concerned.

This cottage is thoroughly disinfected twice every year in addition to the free use of disinfectants daily about the wards and day-room. Sputum and other excreta are carefully looked after.

Aside from fresh air we try to give these patients good wholesome food with plenty of milk and eggs. As to medicine, we use comparatively few medicines.

In addition to this care of the known tubercular patients, we also watch up the development of tuberculosis in our other wards. All of our patients are required to be out at least two hours daily in any kind of good weather, while in the summer time this number of hours is quite materially increased. In addition to that, all of the patients are carefully weighed every six months, and in any case where there is a loss of weight the patient in question is carefully gone over and examined with a view to discovering whether she has any tubercular lesions. If she is at all suspected, she is kept in a separate room by herself until she is a proven case of tuberculosis. She is then moved to the cottage and the room in which she has been living is thoroughly disinfected before another patient is put into it. In addition to this we have been in the habit, for the past four or five years, of giving a thorough disinfection to all of our wards once every year. We have been doing this, not only with a view to stamping out tuberculosis, but also of lessening the danger of erysipelas and several other contagious diseases which are often annoying to hospitals of this kind.

Dr. H. A. Hutchinson, Superintendent of Dixmont Hospital for the Insane, under date of February 14, 1908, writes as follows:

DEAR DOCTOR:

In answer to your letter I may say we have very few patients afflicted with tuberculosis in this hospital; particularly is this true when one considers our excessively over-crowded condition. For years past it has been the custom to isolate all these patients, in so far as possible, and during the pleasant seasons of the year they are compelled to lead an out-door life—to live in the open air during the day and sleep in the open air at night. This procedure is maintained up until the advent of cold weather. Upon the male side of the house some of these patients sleep on our porches the whole winter long. The benefit derived from this method is so wonderful that we continue it in every case wherever possible. During the past summer the women occupied a little cottage where they got along very nicely. Only recently I have moved all these patients into a very beautiful building remove from the main building, where they will have every comfort and care we can give them. It is the intention of the managers to put up another such building the coming spring when the weather permits,

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Dr. S. S. Hill, Superintendent of State Asylum for Chronic Insane, Wernersville, under date of February 12, 1908, writes as follows:

DEAR DOCTOR:

Replying to your inquiry, will say that for five or six years we have been isolating our cases of tuberculosis, keeping them in tents. We give them no special medical treatment, but as far as possible follow the White Haven plan in regard to diet. We have recently devised a shelter which is an improvement on the tent, and which is almost a necessity in the care of many of our cases. The good results we have obtained from the out-door or tent-life treatment for our cases of tuberculosis, encourages us to continue it.

The treatment is, as you have heard, very simple. It is based upon the principle enunciated by Imperial Health Boards of Germany—"It is impossible to extirpate all tubercle bacilli, therefore it is indispensable to so strengthen and harden the body that the absorbed germs cannot take hold upon it." The patient is kept, as much as possible, in the open air, as the principal feature. The very favorable surroundings of our State institutions, with their spacious lawns and shady walks, remote from thickly inhabited localities, gives them a special advantage in carrying out the hygienic treatment. As a result of isolation and disinfection of clothing and other precautions, the communication of the disease by contagion is absolutely prevented, and the number of cases is very much reduced. The mortality has been diminished, in some institutions, to nearly one-half of what it was a few years ago, before the present methods were introduced. I would say, therefore, that the prognosis of a tuberculosis insane patient, except in terminal dementia, becomes very much improved if he is placed in a large institution like our State hospitals, where their equipment enables them to carry out the fresh air treatment, or the White Haven method of Dr. Flick.

In conclusion, I would just say a word on rather a delicate subject, since I have no reason to believe that this advice is at all necessary. I wish to make a plea for the humane treatment of the dying. I do not think that all patients indiscriminately should be subjected to this harsh, but invigorating treatment. We should make a distinction between cases that are in the early stages or in the third stage, and those which are manifestly beyond hope of recovery, or, as a German professor says, "The light and the heavy cases." I would beg that all patients, and especially the moribund, may be spared unnecessary suffering from exposure. Mr. Beers, who recently wrote an entertaining account of his experiences while insane, found that suffering with cold was the hardest to bear. His description of his sensations is so graphic I will take the liberty of quoting his words.[1]

"To be half frozen day in and day out for a long period is exquisite torture. Of all the sufferings I endured, that occasioned by confinement in cold cells seems to have made the most lasting impression. Hunger is a local disturbance, but when one is cold every nerve in the body registers its call for help."

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[1] "A Mind That Found Itself." P. 154.

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DeQuincey, the author of "Confessions of an English Opium Eater," says, "Amongst all the hardships and bitter inheritances of the flesh, not one—not even hunger—seems, in my eyes, comparable to that of nightly cold."

There is a group of cases which we all recognize in which consumption is not to be regarded as a disease so much as it is as a mode of dying. In such cases, whether among the sane or insane, curative treatment is out of place. The best therapeutics for this hopelessly afflicted class of fellow-creatures is that which is inspired by the Golden Rule.

SYSTEMIC INFECTION THROUGH THE TONSILS.

By RUFUS B. SCARLETT, M.D.,

Instructor in Diseases of the Throat and Nose in the Philadelphia Polyclinic, Philadelphia.

In the light of the more recent investigations it seems to be the consensus of opinion that the tonsils are the portals of entry for the infectious material of innumerable diseases. When we consider that the situation of these glands is a prominent one, and such that they are readily exposed to any infection entering the oral cavity, it seems fair to assume, as pointed out by various writers, that the tonsils play an important part in the causation of disease.

After an exhaustive study of the tuberculous deposits in the tonsils, in which he carefully reviews the literature and collects some 1,671 cases, Wood[1] states that the tonsillar tissue of the throat, because of its peculiar anatomic construction and its topographical relations, is more liable to become infected than any other part of the respiratory tract. Krückmann, Hanau,[2] and other observers agree with Wood in the view that the tonsils are often the portals of entrance for the tubercle bacilli in cases of tuberculosis of the cervical lymphatic glands. Wood[3] also claims as the result of his experiments and dissections that the faucial tonsil is one of the three most important sources of infection of the cervical lymph glands. He points out the significance of the situation of the enlarged cervical glands, and demonstrates the fact that when the infection gains entrance through the faucial tonsil, it will usually be indicated by the enlargement of the posterior gland of the submaxillary group, which will be palpable below and behind the angle of the jaw, and which he has termed the "tonsillar gland." His dissections further show that when infection takes place through the pharyngeal tonsil, the lymphatic glands situated just beneath the posterior border of the sterno-mastoid muscle are the ones usually affected.

It has long been recognized that diseased tonsils are often the causal agents for disturbances of the digestive tract, for respiratory interference, for deafness, for a catarrhal condition of the mucous membranes, and for an impedi-

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1 Jour. of Amer. Med. Assoc., May 6, 1905.

2 Virchow's Archiv., quoted from Bishop, p. 204.

3 Amer. Jour. of Med. Sc., April, 1906.

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ment in the general welfare and proper development of the child. Until such conditions are remedied the patient is more or less exposed to infection, and according to recent literature, the number of diseases liable to be contracted are many.

Adler[4] states that acute articular rheumatism, endocarditis, pleurisy, acute osteomyelitis, actinomycosis, various forms of general sepsis, nephritis, and tuberculosis have been traced with more or less certainty to the tonsils as the starting point, and also states that typhoid fever has even been suggested.

Casselberry[5] cites the case of a boy whose tonsils were very much hypertrophied and contained multiple puriform foci. Attacks of polyarthritis, which were supposed to be rheumatism, usually followed the attacks of acute tonsillitis. Suspecting the tonsils to be the source of infection, tonsillectomy was performed, and both the tonsillitis and the secondary attacks of arthritis were promptly and permanently suspended.

Working along the same lines, Brown[6] obtained results which suggested to him that there is a growing clinical and experimental evidence that the tonsils are the portals of entry for the infectious material in a wide range of diseases, among which are pericarditis, myocarditis, endocarditis, arthritis, chorea, neuritis, adenitis, glandular fever, nephritis, pleurisy, tuberculosis, iritis, phlebitis, osteomyelitis, and various other streptococcus and staphylococcus septicæmia, Hodgkin's disease, and possibly certain forms of leukæmia.

Morse[7] reports four cases of nephritis which occurred in connection with simple follicular tonsillitis, and in which scarlet fever could be positively excluded. While albumin appeared in the urine within twenty-four hours after the onset of the attack, the quantity was never very voluminous. As the result of the observation of these four cases within eight months, the author was led to believe that tonsillitis must be more often followed by nephritis than is usually supposed.

The views of Kretz[8] seem to extend beyond those of some of his more conservative colleagues. He presents arguments to sustain his assumption that even attacks of appendicitis may be due to absorption of infectious material through the tonsils, and cites cases in which he actually believes this occurred. He noted that in many cases of appendicitis, not only were the tonsils the seat of septic infection, but the adenoid tissue of the appendix and Peyer's patches were the localization of a condition that should be called "bacteriæmia." He claims to have demonstrated by these observations that an acute angina may lead to a bacteriæmia, and this condition, in turn, to a phlegmonous appendicitis. The idea of examining the tonsils in many cases of appendicitis, endocarditis, and pleuritis disclosed to the author the fact that more than fifty per cent. of the patients had previously suffered from angina.

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4 N. Y. Med. Jour., 1906, vol. lxxxii.
5 The Laryngoscope, June, 1906.
6 Jour. Amer. Med. Assoc., June 15, 1907.
7 Archiv. Pediatrics, 1904, p. 337.
8 Abst. Jour. Amer. Med. Assoc., April 13, 1907.

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Babbitt[9] states that recent research has shown that the tonsillar condition is primary in many cases of rheumatic fever and the exanthematous diseases, and that systemic absorption may be augmented by the atrophic thinning of the epithelial lining of the tonsils.

The experience of Casselberry[10] is similar in many respects to that of other writers. He also noted as the result of clinical observation that the tonsils serve as portals of infection in certain types of rheumatism, endocarditis, nephritis, and phlebitis.

Adler is of the opinion that it is quite probable that many cases of streptococcus pneumonia, as well as pneumococcus pneumonia, have their origin in infection through the tonsils.

White[11] makes the simple statement that since enlarged cervical glands have disappeared on the removal of hypertrophied tonsils and adenoids, it demonstrates the fact that these latter structures are important channels of infection. According to Ferguson and Pedersen,[12] three-fourths of all cases of cervical adenitis in children is due to the absorption of some irritant through the tonsils.

While we usually look upon the hypertrophied tonsil as the one permitting the absorption of infectious material, Goodale[13] claims that systemic infection may occur when the organ is of normal size. The inoculation of guinea pigs with tonsillar-tissue led the author to this conclusion. Wood[14] went a step further, and while admitting that infection may take place through the faucial tonsil, claimed that the pharyngeal tonsil is usually the source.

A. Jacobi[15] believes that while the normal infantile tonsil, which has not suffered from previous exposure or disease, may permit some invasion into its tonsillar structure, or even beyond it, microbic invasion is not as frequent as that which takes place through the lymph apparatus of the pharynx.

In what manner and to what extent infectious material is absorbed by the tonsil appears to be a subject still open for active discussion. Numerous efforts have been made to determine the true functions of the tonsils, and to thereby strengthen the hope of solving the secret of infection through this portal. The progress thus far has extended merely to the determination of the property which is common with all adenoid tissues, *i.e.*, the production of lymphocytes in the secondary nodes or follicles.

Wood,[16] in studying the functions of the tonsils, confesses that our knowledge concerning the physiology of the tonsillar tissue of the throat is at present somewhat indefinite, and that while many ingenious theories have been advanced by various writers, the real reasons for the existence of the tonsils have not as

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9 Annals Oto. Rhino. and Laryngo., December, 1907.
10 *Loc. cit.*
11 Amer. Jour. Med. Sc., August, 1907.
12 Quoted from the Medical Epitome Series, "Nose and Throat."
13 Bost. Med. and Surg. Jour., 1906, vol. clv, p. 278.
14 *Loc. cit.*
15 Archiv. Pediatrics, 1906, vol. xxiii, p. 481.
16 University of Penna. Bulletin, October, 1904.

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yet been explained. His investigations, however, as well as those of Goodale,[17] Kayser,[18] Hendelsohn,[19] Pirera,[20] and others, appear to firmly establish the fact that the tonsils can absorb fluids and finely divided solid particles from their crypts. The possibility of bacteria being absorbed seems to be still under dispute.

Brown[21] also reviews the tonsillar experiments of the above authors, as well as many others, and comes to the conclusion that minute particles of foreign matter, dust, carmin, and other pigments, when locally applied, are rapidly absorbed by the tonsils from their crypts, and are found easily in sections of the tonsils as early as fifteen minutes afterward. While admitting the entrance of bacteria into the tonsils, he states that they do not pass as rapidly as do the pigments, and are rarely recoverable in the tissues under ordinary circumstances. The milder organisms are probably absorbed less rapidly than the pigments or the more virulent bacteria, and are promptly destroyed as soon as they enter the tonsillar parenchyma, unless they are able to resist the possible inhibitory action of the tonsil, and even then their virulence is probably somewhat altered. The virulent organisms follow the same course as the dust particles and the non-pathogenic or mildly pathogenic bacteria, and may cause local lesions, lymphatic involvement, and lesions in any part of the body. Tubercle bacilli may lodge and remain indefinitely in the crypts ready to be absorbed at any time; consequently they are a constant source of danger, even though not involving the tonsil in actual disease.

Goodale[22] practically arrives at the same conclusions. He states that while we know that polymorphonuclear leucocytes are normally entering a crypt through its loose lining membrane and assuming the rôle of phagocytes, it has been shown that inorganic particles and fluids are continually entering the tonsillar tissue from the crypts and passing in the direction of the efferent lymph channels. Bacteria, however, can rarely be demonstrated in the tonsillar tissue proper, although they may be found in great numbers in the crypts. The writer concedes, however, that tuberculosis and infectious arthritis are exceptions to the above, and may be considered instances of bacterial invasion of the system.

Jonathan Wright[23] is convinced from his carmin-stained sections that dust, under ordinary conditions, passes readily through the intact surface epithelium of the tonsil. Although he acknowledges that this is a marked contrast to the way bacteria enter, yet clinical and microscopical evidence prove that pathogenic bacteria are absorbed through the tonsillar epithelium.

Wood[24] in his monograph on "The Lymphatic Drainage of the Faucial

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17 Archiv. f. Lar. u. Rhin., 1897, vol. vii, p. 90.
18 Therap. Wochenschr. v. Schnirer, October 17, 1897.
19 Archiv. f. Lar. u. Rhin., 1898, vol. viii, p. 486.
20 Archiv. Ital. di Laringol., April 1, 1900.
21 *Loc. cit.*
22 *Loc. cit.*
23 N. Y. Med. Jour., January 6, 1908.
24 Amer. Jour. of Med. Sc., August, 1905.

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Tonsils" begins thus: "That various micro-organisms may gain access to the general system through the tonsillar tissues of the throat has been so firmly established that it is not necessary again to demonstrate the absorbing properties of the tonsils and to point out the various infections which may enter through this portal. The fate of the micro-organism which has entered the parenchyma of the tonsil is dependent upon two factors—first, the pathogenic potency of the germ itself; and, second, the vital resistance offered by the tissues to its invasion. If a non-pathogenic germ enters a crypt it is destroyed probably by the phagocytosis of outwandering polymorphonuclear leucocytes. On the other hand, if the vitality of the germ is sufficiently great, it lives, and may penetrate through the epithelium into the interfollicular tissue." This has also been the experience of Pirera[25] and Lexer.[26]

According to the results obtained by several prominent observers, certain conditions of the tonsils seem to encourage invasion. Wood[27] admits that it is practically impossible to establish with absolute certainty the relative importance of the different lymphatic masses in the throat as gates of infection. He claims, however, that circumstantial evidence, both clinical and experimental, tend to show that the larger the lymphatic mass and the deeper the crypts, the more readily do the pathogenic germs pass through the tonsillar tissues to the tonsillar efferents. It has also been noted by White[28] that infection is favored by irregular crypts or pockets, resulting from previous inflammation or shrinkage.

In contrast to the theory that bacteria may be absorbed by tonsillar tissue, Ribbert[29] claims to have proven by experiment that bacteria cannot penetrate sound epithelium covering the tonsils. His results were confirmed by the investigations of Hodenpyl.[30] The fact that these results were obtained many years ago causes one to hesitate to accept them in preference to contrary views obtained as the result of more recent investigations.

The experience of E. Barth[31] would lead one to believe that the tonsil is more of a secretory organ and incapable of absorptive properties, and that toxic substances are disposed of rather than absorbed. He concludes his study of the anatomy and physiology of the tonsils with the statement that all testimony seems to point to a current of lymph and secretion in the tonsils flowing outward, and that the tonsils are extremely important aids in the elimination of toxic substances and bacteria circulating in the body fluids. He further states that when the normal tonsil becomes inflamed the probabilities are that the infection has arrived from the interior, and that when hypertrophy of the gland takes place it merely testifies to excessive functioning.

Although it has not been demonstrated beyond a doubt that bacteria may

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25 *Loc. cit.*

26 Archiv. f. Klin. Chir., 1897, vol. iv, p. 736.

27 *Loc. cit.*

28 *Loc. cit.*

29 Deutsche Med. Wochen., 1887-8.

30 Amer. Jour. Med. Sc., March, 1891.

31 Deutsche Med. Wochen., December 5, 1907.

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gain entrance into the system through the tonsillar parenchyma, it has been proven that chronic absorption of bacterial products occurs when the crypts contain the whitish decomposing masses which have undergone retention. When the orifice of the crypt is narrowed by contraction of the mucous membrane or by adhesion of the pillars in the vicinity, free egress from the lumen is restricted, and its contents accumulate. In several cases reported, a crypt was found to be dilated near its base, and to contain fetid puriform fluid, although its existence was discovered only after excision.

Since it is an undisputed fact that the best means to overcome any infection is to remove the source of its supply, the complete removal of these glands, or tonsillectomy, is justifiable when sufficient evidence is present to indicate that they have become pathological and are causing systemic disturbance. The size should not always be considered in advising removal, for according to Goodale,[32] chronic absorption of bacterial products may occur in the small or nearly atrophied tonsil, as well as the hypertrophied one. The presence of irregularities or recesses, also, may often interfere with proper drainage and allow some degree of absorption of these bacterial products. Eisendrath[33] advises early and radical removal in all cases, since tonsils and adenoids are the most frequent atria of infection, particularly for tuberculosis, which occurs in about five per cent. of all cases of tonsillar hypertrophy.

Statistics have shown, and experience has verified the results of others, that the satisfactory development of the child is more readily encouraged by the removal of diseased tonsils than if they are continually treated with caustics of various sorts, with the hope that they will atrophy at puberty and cease to cause trouble.

Editorials

"CAUSES OF MORTALITY FROM HEART DISEASE IN THE UNITED STATES."

THE paper under the above caption, by Dr. Thomas Darlington, Commissioner of Health of New York City, is most timely. In a thoroughly convincing manner he shows "the persistent increase in the mortality rate from diseases of the heart" and kidney. This increase is general throughout the country, and is unaccompanied by a corresponding increase in the death rate of other diseases, with very few exceptions, these having no bearing, however, on the causation of cardio-vascular-renal diseases. The almost startling upward trend in the morbidity and mortality of this group of diseases during the past couple of decades forces upon us the necessity for their more careful study from the etiologic standpoint. Unfortunately, from a statistical basis certainly, these maladies are not included in the list of notifiable diseases,

[32] *Loc. cit.*

[33] Amer. Jour. of Surgery, September, 1907.

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though the advisability of such notification is pointed out by Dr. Darlington. Notification in the case of communicable diseases is manifestly imperatively demanded, but its importance in non-contagious disorders, notwithstanding the perennial character of certain groups, as those under discussion, for instance, has not come to be generally recognized. I believe it would make for greater accuracy in diagnosis, enabling us to recognize the special incidence of each member of this morbid trio, and most important in the preventive sense, it would lead to the recognition of particular etiologic factors, in which case, through the efforts of health commissioners, in conjunction with factory inspectors and school physicians, some mitigation in their frequency would doubtless follow. Certain it is, that the almost universal decrease in the general death rate can be ascribed to the "efficacy of the forces at work in the line of preventive medicine and sanitation," and the view is not unwarranted, that more strict interpretation of factory laws and more thorough enforcement of school hygiene, with plenary power vested in our health officers, and especially if exercised under a national department of health, would result in a decided lessening of the frequency of these diseases, and consequently in their mortality. As one would expect from the very nature of his work, the burden of Dr. Darlington's paper is the cause or causes at work in bringing about such a widespread increase in diseases of the heart and kidneys. He quotes the health officer of Honolulu, who says that the death rate from heart disease in that city from 1892 to 1907 has fallen slightly, while the increase from kidney diseases has risen, this latter being due, it is believed, to "more accurate diagnosis and more stringent regulations in the matter of vital statistics." The lowering of the cardiac death rate, in part at least, is ascribed by the Honolulu official to the fact that the island inhabitants, being largely of Oriental birth or extraction, are of stoic mould, and do not live and work under the degree of nervous tension so well known among our own people. It would seem possible to sum up this matter in a single word, competition. Whether in the mart of trade or in the world of sports, the price of success attained by the mad rush so prevalent in our modern methods, is bought at the expense of early deterioration, especially in view of the collateral indulgences so frequently a concomitant of material success. It is a well-known fact that insurance companies regard the athlete as a bad risk, and there is a tendency to look upon those engaged in heavy manual labor or subject to great mental strain, in the same light. In special cases, involving large risks, I have been frequently asked by insurance companies, through their medical examiner, to make blood-pressure observations and a critical study of the cardio-vascular renal system, as they recognize the tendency of the "strenuous life." Illustrations could be submitted to show the direct causal relation between mental and physical strain and the particular maladies before mentioned, but enough has been said to justify Dr. Darlington's paper, and to invite for it a most careful and contemplative perusal.

W. E. Robertson.*

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THE TUBERCULIN AND AGGLUTINATION TESTS IN THE LIGHT OF INTERNAL SECRETIONS.

THE term "tuberculin," as formerly employed, referred to Koch's product; as now used, it applies to any preparation of dead tubercle bacilli, or of culture fluids of these pathogenic organisms. A minute quantity will produce, if tuberculosis is present, more or less marked general phenomena, including a rise of temperature varying from a few tenths to several degrees. What is the cause of this rise of temperature?

Calmette's ophthalmo-tuberculin test (which, by the way, is a safe method if the solution employed be sufficiently weak, not over 0.5 per cent. besides, unlike others, being painless) gives rise, if the reaction is positive, to slight congestion of the conjunctiva with reddening of the caruncle, which may develop into a marked conjunctivitis lasting a few days. Occasionally a general reaction similar to that obtained with injected tuberculin is observed. How account for this general reaction, and for the local phenomena?

Von Pirquet's cutaneous tuberculin reaction is obtained by vaccination as practiced for the prevention of small-pox. It is considered quite harmless. Although the negative reaction precludes tuberculosis, a positive reaction does not always indicate the presence of active tuberculosis, but its value lies in the fact that it calls attention to the possible presence of latent tuberculosis, and of the likelihood of its development. Like the Calmette method, the reaction is local, in that it occurs at the point of inoculation and is inflammatory. How account for this local manifestation?

The agglutination test has another phase of the question in view: The immunizing power of the tuberculous patient. As Paul Courmont said at the recent Congress on Tuberculosis, "As is the case in many other diseases, the agglutinating power of blood serum and other organic liquids in tuberculosis is proportional to the resisting power of the patient. . . . . The sero-reaction is absent, especially in very serious or very advanced cases of tuberculosis. It reaches its maximum in cases which are in process of healing. It can diminish or disappear some time before death; it can, on the contrary, increase when there is an improvement pointing towards healing or arrest of the disease. It seems to be an index of the protective reaction of the system." Wright's opsonic index, as is well known, has a similar purpose in view, to a certain extent, since it serves to indicate the quantity of opsonin, *i.e.*, (the substance which renders bacteria vulnerable to phagocytes) in the blood. Where are agglutinin and opsonin produced?

The sources of these substances, as well as those of the other constituents of the blood concerned with immunity, have remained unknown to pathologists. This is ascribable, as I have pointed out, to the fact that their attention had been diverted by purely theoretical conceptions such as the "side-chain" feature of Ehrlich's theory from the only field which, experimentally and clinically, offers any solid foundation for profitable work on this score—that of the internal secretions. Indeed, Brown-Séquard, Langlois, Abelous, Charrin, Albanese, and

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many others, have laid stress on the antitoxic functions of the adrenals, while Vassale, Gley, Fano, Zanda, Lorand, and many others, have as urgently insisted on a similar action as the legitimate rôle of the thyroid and parathyroids; this applies equally well to the pituitary, according to Marie, Guerrini, Gemelli and others. We thus have a series of organs found *experimentally* and *clinically* to protect the body against intoxication. Is it not logical to conclude that they first claim attention as the most likely to afford elements for a solution?

Logic, backed by experimental and clinical facts, has led to fruitful results on this score. The internal secretions have thrown a flood of light on questions which the pathologist has admittedly failed to elucidate, owing to the restricted field of his labors. Thousands of unpretentious general practitioners have a clear idea to-day as to *how* tuberculin raises the temperature, and *why* it does so only when tuberculosis is present. They can point to the source of antibodies, agglutinin and opsonin, etc., and—the all-essential point to them—they can save life through their knowledge.

CHARLES E. DE M. SAJOUS, M.D.

Cyclopædia of Current Literature

ARSENIC IN SKIN DISEASES.

The history of the use of arsenic in skin diseases is reviewed by the writer, showing that its use is much more restricted than formerly, and he remarks more particularly on its employment and value in certain special disorders. It is generally agreed that it is contraindicated in acute inflammatory conditions of the skin, and this excludes its use in acute eczema. Authorities are about evenly divided as to its value in chronic eczema, but the author puts little faith in it, and cannot recall a single instance in his experience in which it seemed to be of the slightest use. In psoriasis, on the other hand, dermatologists are particularly agreed in attributing to it a certain value. It is not adapted to all cases, however, and is sometimes disappointing. It seems to do best in recent cases, and such as have not had other arsenical treatment. In lichen planus it is generally admitted to be a useful remedy. The writer finds it most effective when the eruption occurs in limited areas, and when there is little or no itching. If the greater part of the skin is involved, and there is marked pruritus, it is apt to aggravate the latter, and seems to influence the course of the disease but little. In such cases other remedies, such as the salicylates, will be found more useful. In pemphigus, while hardly a specific, or even curative, it is one of the most useful internal remedies, diminishing the liability to relapse and lengthening the intervals between the outbreaks. Much the same can be said as regards its value in dermatitis herpetiformis. There is considerable evidence that arsenic, especially when given hypodermically, is sometimes useful in sarcoma of the skin, and more particularly in the form described by Kaposi as "idiopathic multiple hæmorrhagic sarcoma." The writer has seen an

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apparent arrest of the disease under its influence. In a small number of cases arsenical treatment has appeared to be useful in mycosis fungoides, but, in the opinion of most authors, little is to be expected from it in the majority of cases.

The author relates his experience with sodium cacodylate and atoxyl in the treatment of psoriasis. While there was improvement, in no case was there anything like a cure. He has employed atoxyl in a severe case of pemphigus with benefit, but, from his experience, limited as it is, he is led to conclude that atoxyl, like sodium cacodylate, does not possess any therapeutic properties not possessed by arsenious acid, Fowler's solution or the arseniate of soda. Its greater solubility and freedom from irritant properties, however, adapt it especially for hyperdermatic use, a method often preferable to administration by the mouth, and one which usually gives superior therapeutic results.

In conclusion, he calls attention to an untoward effect of arsenic which deserves consideration by every one employing it in chronic disease. It is now well-established that the long-continued use of arsenic, especially in considerable doses, may be followed by circumscribed keratoses on various parts of the body, and more particularly on the palms and soles. Mr. Jonathan Hutchinson, some years ago, called attention to the fact that epithelioma may develop from these keratoses, and this observation has since been confirmed by at least twenty cases of such arsenical epithelioma reported in medical literature. M. B. Hartzell (Journal of the American Medical Association, October 31, 1908).

CRETINISM, ENDEMIC.

From a study of endemic cretinism in India, the writer concludes that the degree to which cretinism is associated with goiter is determined by the age of the endemic and varies directly with the extent to which the latter disease prevails among the adult population. Cretinism is rarely, if ever, due to the development of a goiter in the individual. The thyroid enlargement is, or may be, an effect; it is not the cause of the disease. Defective thyroid function in the mother is the essential factor in the production of cretinism. It is due to the action of toxic agents, notably that of endemic goiter on the developing thyroid of the unborn child. The thyroid defect is congenital, but it may remain latent pending its manifestation through the impulse of some accidental circumstance. The defect in cretinism is one of the whole thyroid mechanism, of the parathyroids as well as of the thyroid gland. The diversity of symptoms is due to the extent to which the defect bears upon the whole or part of that mechanism. R. McCarrison (Lancet, October 31, 1908).

EXOPHTHALMIC GOITER AND THYROIDISMUS, BLOOD CONDITIONS IN.

The well marked cases of exophthalmic goiter show a great reduction of polynuclear leucocytes, as great as fifty per cent., and a great increase of mononucleated white corpuscles (lymphocytes in the narrow sense) up to fifty per cent. The small lymphocytes predominate among the mononucleated white blood-corpuscles. The increase of the entire number of mononucleated white corpuscles is found, though not in so high a degree, in thyroidism. This can be of value in cases that are difficult to diagnosticate. The proportion in which the lymphocytes in the narrow sense and the large mononucleated cells take part in the increase of the entire number of

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mononucleated white blood-corpuscles varies in different cases. In the cases of simple thyroidismus an increase of the large cells seems to predominate, in the severer cases of exophthalmic goiter the small lymphocytes. The fewer the clinical symptoms of thyroidism that are present, the more nearly does the condition of the blood approach the normal. In a case of formerly marked exophthalmic goiter, which clinically appeared to be healed, the blood approached the normal, but a slight increase of the large mononuclated leucocytes induced slight toxic influence, both in this case and in cases of struma without noticeable thyroidism. In one case, after resection of the thyroid gland, a slight improvement in the condition of the blood was observed; in another none except a slight reduction in the number of the large mononucleated leucocytes, but in both cases the time of observation was too short. In the cases given tablets of thyroid gland an increase in the total number of mononucleated leucocytes and of the polynucleated leucocytes was observed without exception. At first the increase of the large mononucleated leucocytes appears to be relatively greater. L. Caro (Berliner klinische Wochenschrift, September 28, 1908; New York Medical Journal, November 21, 1908).

OTITIS MEDIA AND INFECTIOUS DISEASES.

The writer discusses otitis media, complicating scarlatina and measles. On detecting an involvement of the middle ear he gives calomel, $\frac{1}{10}$ grain, every half-hour for ten doses, produces diaphoresis by hot drinks, Dover's powder, etc., irrigates the canal of the ear with hot bichlorid solution, 1 to 5,000, or boric acid and normal salt solution at 110° F., using two quarts of fluid every hour, and inducing a combined hyperæmia by means of a suction-bell douche. Premature incision of the drum should be guarded against, but the membrane should be promptly incised on the first positive sign of confined pus in middle ear or mastoid. Meningeal symptoms or tumefaction in the posterior, superior walls of the external auditory canal near the drum, demand prompt incision. If examination of pus from the middle ear shows the presence of streptococci, do not delay further operative measures if symptoms of mastoid involvement appear. Drainage once established must be maintained. The combination of suction and irrigation is efficient. E. P. Fowler (American Journal of Obstetrics, September, 1908).

PYOCYANASE IN THROAT AFFECTIONS.

The author has used this preparation as a spray in diphtheritic sore throat, in Vincent's angina, and in sore throat of scarlet fever. Every case was diagnosed by bacteriological examination. Previous laboratory experiments showed that the preparation had a solving effect upon the diphtheritic membrane, partly inhibited the growth of diphtheria bacilli in cultures, but did not bind the toxin of that disease. Clinically, the spraying with pyocyanase led to rapid diminution in the extent of diphtheritic membranes; the sore throat of scarlet fever, accompanied by streptococci, was quickly relieved; Vincent's angina was controlled in two or three days by the spray; simple sore throat with exudation upon the pharyngeal and tonsillar mucous membranes was likewise very favorably affected by the new preparation. Pyocyanase cannot take the place of diphtheria antitoxin, but may enable the use of smaller doses of it than usual.

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It has distinct bactericidal action, but does not seem to possess antitoxic properties. Saar (Deutsche medizinische Wochenschrift, September 3, 1908; Medical Record, October 3, 1908).

SERUM AND VACCINE THERAPY.

Contrary to the early hopes, the great mass of bacterial disease still remains outside the antitoxin category, and speculation has been forced to seek other theories to explain the immunity acquired after infection with organisms such as typhoid and kindred bacilli, the cholera spirillum, and the various cocci. In the fight against these specific organisms it has been determined that Nature's efforts are against the bacteria themselves, and not against their toxins. There is now good evidence that organisms, such as typhoid, dysentery or plague can produce soluble poisons, and that antitoxins of a moderate strength can be obtained. Studies in immunity have not only included bacteria and their infections, but a great variety of animal and vegetable cells and poisons, with their corresponding antibodies. These are considered successively, and the results which have been accomplished by them. With reference to the value of the opsonic index as a guide for the use of vaccines, the author thinks the opinion has steadily gained ground that the index is so unreliable as not to justify the amount of time and trouble necessary for its determination. M. W. Richardson (American Journal Medical Sciences, October, 1908).

SPLANCHNOPTOSIS, RATIONAL TREATMENT OF.

The causes of splanchnoptosis lie far back in the origins of growth and development, and have a neurasthenic tendency as their source. Many factors blamed are usually efficient or instrumental only, and are not primary causes. Cellular vitiation in several situations has to be overcome, among which are loss of nutritive vigor in the vasomotor subcenters in the cord, through which the affected parts are innervated; and, consequently, impairment of nutrition in the internal structures which contribute to support; relative weakness in the external abdominal muscles.

Dietetic measures are indicated to overcome intestinal putrefaction. Replacement of the wandering viscus should be performed by the physician himself. The abdominal viscera are supported by the combined action of the skeletal structures, mutual adaptations among the structures within the cavity of the abdomen, the diaphragm, the omentum, and the external abdominal walls. Measures must be taken to develop the supports, and to secure tone of the muscles of the torso. No muscles of the human body are so neglected as those of the diaphragm, external abdominal muscles, and those involved in respiration. Systematic breathing exercises are recommended. Artificial aid may be obtained by abdominal supports, among which the author describes that of Longstreth. Finally, attention is directed to the potentialities evoked by manipulating the paravertebral tissues, with the purpose of so stimulating the vasomotor subcenters that the activity of the local circulation shall enhance nutrition in the disaffected structure. By the rational treatment of splanchnoptoses and their underlying neurasthenic condition, many invalids can be rescued from lives of misery or from cruel limitations. J. Madison Taylor (Medical Record, October 17, 1908).

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SUPRARENAL GLANDS AND OSTEOMALACIA.

The case of a woman is reported, seven months' pregnant and suffering from an extreme degree of osteomalacia. She suffered most severely from the usual symptoms—pain, difficulty in walking, anæmia, osteomalacia cachexia, and insomnia. As the pelvis contracted her torture became extreme. Because of the ischæmic effect of adrenalin, and because of the demonstrated relations between the ovaries and suprarenal glands, adrenalin was given in doses of 0.5 c.c. The pains immediately began to disappear, the pelvis dilated, and the patient was spontaneously delivered of a normal child at term. A second pregnancy was unaccompanied by any signs of osteomalacia. The writer thinks he has not only discovered a new method of treating osteomalacia, but also evidence that insufficiency in the function of the suprarenal glands must be the cause, or a factor in the causation, of osteomalacia; the suprarenal glands exercise an important influence on the ossification of the skeleton. If these results are confirmed the ossification of the skeleton in rickety children should be accelerated by the administration of adrenalin. L. M. Bossi (British Medical Journal, September 19, 1908).

SYPHILIS, MINERAL WATERS IN THE TREATMENT OF.

The beneficial action of sulphur waters in syphilis is attributed by the writer to the combination of the sulphur with the insoluble mercury albuminate resulting from mercurial treatment, transforming it into a soluble mercuric sulphate. The sulphur waters act on the mercury which remains stored up and inert in the organs, and renders it soluble, thus restoring its therapeutic power even a long time after its ingestion. A course of sulphur waters also prevents or cures symptoms of mercury poisoning, as the waters induce rapid elimination of the mercury. Syphilitics taking sulphur water can bear mercury in doses two or three times the average, even in cases of very susceptible individuals. The patient is kept in a mercurial atmosphere which might be dangerous if it were not for the safety valve formed by the sulphur. Even the average doses are better utilized, and thus better results are obtained. The writer advises an occasional course of sulphur water for every syphilitic, even when he is apparently well. During the first stage of syphilis these courses should be taken preferably during the periods of suspension of mercurial treatment. Later it is a good precaution to combine the waters with the specific medication. C. de la Carrière (Presse médicale, August 12, 1908; Journal American Medical Association, September 19, 1908).

TYPHOID FEVER, SPECIFIC TREATMENT OF.

As the result of his investigations, the author announces that it is impossible that an antitoxin comparable to that which is used in the treatment of diphtheria should be found for typhoid fever. Diphtheria being so essentially distinguished from typhoid fever in the nature of the infection, it would be impossible to draw conclusions from one and apply them to the other. There is no satisfactory evidence that the typhoid bacillus produces a soluble poison. The mechanism of immunity is not the same in all infections and intoxications. Three forms of immunity are possible: 1, Antitoxin immunity, in the produc-

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tion of which neither phagocytic activity nor proteid cleavage has any concern; 2, phagocytic immunity, which shows that with virulent or slightly virulent strains phagocytic activity may be increased, while with highly virulent strains such is not the case; 3, lytic immunity, which may also be termed bactericidal or bacteriolytic immunity. There is no antitoxin for the typhoid poison. Phagocytic action is not a marked factor in the natural recovery from typhoid fever, and the author proposes to see what can be made out of lytic action in the study of the nature, progress and recession of typhoid fever. V. C. Vaughan (American Journal Medical Sciences, September, 1908).

Book Reviews

THE HARVEY LECTURES. J. B. Lippincott Company. Philadelphia and London. 1908.

The collected lectures of the Harvey Society during the year 1906-7 include some exceedingly important subjects. These are: The "Principles of Vaccine Therapy," A. E. Wright; the "Common Bacteriologic Infections of the Digestive Tract, C. A. Herter; "Vasomotor Relations," W. T. Porter; the "Myelins and Potential Fluid Crystals of the Body," J. G. Adami; the "Factors of Safety in Animal Structure and Animal Economy," S. J. Meltzer; "Metabolism During Inanition," F. G. Benedict; "Recent Studies of Heredity," E. B. Wilson; the "Genetic Interpretation of the Variations in the Genito-Urinary Tract," George S. Huntingdon; "Changes in the Lymphoid Tissue in Certain of the Infectious Diseases," W. T. Councilman; "Nervous Disorders of the Heart," Friedrich Müller. Many of these essays, published elsewhere, have already become recognized as classical presentations of the subjects and are now, fortunately, included in one volume.—J. M. T.

THE PROLONGATION OF LIFE. Optimistic Studies. By Elie Metchnikoff, Sub-Director of the Pasteur Institute, Paris. Translated by P. Chalmers Mitchell, M.A. New York and London: G. P. Putnam's Sons, 1908. Chapters XX, Pages 343.

Anything which Professor Metchnikoff writes is worthy of respectful attention. These essays are adapted for popular reading, but helpful as well to physicians. The title of the book, as originally published in French, was "Optimistic Essays" (the sub-title of the present volume), which describes the material more accurately than the one now used. Metchnikoff is a biologist, not a clinician. He has given us an excellent presentation of the phenomena of aging, and the book supplies material which can be used to advantage by the intelligent physician, but will require a good deal of modification to make it suitable for affording general advice for the laity and how to stay young.

This book is a further development of Professor Metchnikoff's views on harmonies and dis-harmonies in "The Nature of Man," and would be of more value if he had had the practical experience of the bedside, although all that he says is agreeable and instructive, and particularly worth study by physicians.—J. M. T.

DISEASES OF THE EYE. By M. Stephen Mayou, F.R.C.S., with 119 Original Illustrations and 8 Color Plates. Oxford Medical Manual Cloth. London: Henry Frowde, 1908.

This is a small book of 388 pages. It is designed for beginners in ophthalmology and to serve as a practical manual for the general practitioner. The external diseases are more fully treated upon than are those of the fundus. The theories advocated are well established and may be accepted as authoritative. We can heartily recommend it to the young resident in a general hospital who occasionally has to take charge of the eye patients admitted to the wards and others under treatment in the out-patient departments. The illustrations have been carefully made; many are from the author's own histological preparations. In the Appendix are a number of prescriptions used in ophthalmic medicine; there is a good index. —B. C.

PATHOLOGICAL TECHNIQUE. Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M.D., Associate Professor of Pathology, Harvard Medical School, and J. H. Wright, M.D., Director of the Pathological Laboratory, Massachusetts General Hospital. Fourth Revised Edition. Octavo

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of 480 Pages. Illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, $3.00, net.

This admirable work on pathological technique needs no formal introduction to the members of the medical profession, for it has long been a prominent guide in this branch of medicine in many of the foremost laboratories. The new edition is in good season, for time cannot help but work changes in technic and the various laboratory methods in this era of scientific research. The prominent feature of this volume is the careful revision, which includes the omission of obsolete methods and the addition of the newer ones.

In Part II are inserted Zinsser's anærobic method for plate-cultures, and three new methods for the cultivation and differentiation of the typhoid bacillus, the ox-bile method, the medium of Endo, and the malachite green medium. The paragraphs on the micro-organism of actinomycosis have been entirely rewritten to accord with recent investigations on the subject.

Part III shows the following additions: Weigert's iron hematoxylin stain for nuclei; improvements in the methods for staining fibroglia, myoglia, and neuroglia fibrils; Wright's method for differential staining of blood-platelets and the giant cells of the bone-marrow; Best's improve stain for glycogen; Von Kossa's silver method for demonstrating lime-salts, staining methods for the treponema pallida, and Sir A. E. Wright's method of preparing bacterial vaccines.

The general arrangement of the text is similar to that of previous editions. Post-mortem examinations are first considered, the various instruments used are enumerated, and general rules are laid down for the technique in the performance of this operation. Under bacteriological methods the preparation of culture media, the methods of collecting material and its examination, the studying of bacteria in cultures, and the description of the various pathogenic bacteria are all duly considered. Histological methods also receive ample attention. The various processes of preparing tissues for examination are pointed out in the same concise and comprehensive manner that characterized earlier editions. The illustrations are good, instructive, and assist materially in understanding the text. This work will, no doubt, continue to be the boon companion of the laboratory worker.—R. B. S.

THE LAW IN GENERAL MEDICAL PRACTICE. By Stanley B. Atkinson, M.A., M.B., B.Sc., of the Inner Temple, Barrister-at-Law, Hon. Secretary of the Medico-Legal Society, etc. London: Henry Frowde, Hodder and Stoughton, 1908.

This contribution is one of the Oxford medical publications and is an excellent presentation of the legal questions involved in the exigencies of medical practice from the standpoint of Great Britain. The fact that it is written in, and doubtless for practitioners of, Great Britain does not limit its value for Americans, because it gives less of court procedures, precedents, and the like than one might expect, and deals directly and clearly with the principles involved. It is an excellent little book of two hundred odd pages (including a bibliography), which a man may read in a couple of hours and be vastly the better for so doing. Indeed, it would form an excellent basis for half a dozen lectures in any medical school, especially one for post-graduates.—J. M. T.

MATERNITY. By Henry D. Fry, M.D., Sc.D., Professor of Obstetrics in Medical Department of Georgetown University, etc. New York and Washington: Neale Publishing Company, 1907. Price, $1.50.

Dr. Fry has given us an excellent little book upon the subject of maternity devised for the lay reader, which means the expectant mother, the mother, the medical student, and the trained nurse. He speaks from the standpoint of an expert in obstetrics and supplies an excellent mass of information with clear, specific directions. In general his views are sound, practical, and well expressed.—J. M. T.

CLINICAL LECTURES AND ADDRESSES ON SURGERY (Oxford Medical Publications). By C. B. Lockwood, Surgeon to St. Bartholomew's Hospital, London. Henry Frowde, Oxford University Press; Hodder & Stoughton, Warwick Square, E. C.

This small volume is a series of clinical lectures and addresses on surgery which have previously appeared in the British Medical Journal and in the Clinical Journal, and are here produced at the request of the pupils and friends of the author in a form convenient for reference. The text is composed mostly of the review of cases in which a faulty diagnosis has been made, and the true condition of affairs determined only at the time of the operation, or finally arrived at by definite clinical reasoning. With the rehearsal of many cases which have been wrongly diagnosed, the writer points out the necessity for careful and detailed examination of each case, and does not lose an opportunity to advocate this point

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with marked emphasis. Among the subjects covered are: "An Introduction to the Study of Clinical Surgery"; "Clinical Reasoning"; "The Course of Intra-abdominal Inflammation"; "On the Recognition and Management of Intestinal Obstruction"; "The Essentials of Diagnosis"; "Secondary Infection of the Lymphatic Glands in Malignant Disease of the Tongue"; "Carcinoma of the Breast and its Spread into the Lymphatics"; "Varicose Veins"; "Swellings Above, Below, and Within the Neck of the Scrotum, Particularly Inguinal Varicocele and Hydrocele"; "Exploratory Laparotomy, especially in Cases of Malignant Disease"; "Fecal Leaks and Fistulæ"; "The Immediate Microscopical Diagnosis of Tumors during the Course of Operations"; "Clinical Pathology in its Relation to Diagnosis and Treatment," and "Salivary Calculi."

The demand for a second edition has permitted the author to add some additional matter, and this book in its new form will, no doubt, continue to be of interest to those who have followed the lectures.—R. B. S.

NEUROLOGICAL AND MENTAL DIAGNOSIS: A Manual of Methods. By L. Pierce Clark, M.D., Senior Attending Physician, Hospital for Nervous Diseases, New York, etc., and A. Ross Diefendorf, M.D., Lecturer on Psychology in Yale University, Assistant Physician and Pathologist in Connecticut Hospital for the Insane, etc. New York: MacMillan Company, 1908. Price, $1.25.

There has long been needed a small, practical manual, such as this, on how to proceed in the examination of (1) nervous cases and (2) cases of mental disease. This book is admirably conceived and executed. The authors are men of well established reputations in their special branches. The first half of the book, on neurologic methods, is by Professor Clark, and the second half, that on mental examination, is by Professor Diefendorf. The reviewer, who has had much personal experience in dealing with the conditions here considered, is glad to testify to the admirable result before him. It has been his privilege on many occasions to deplore the ignorance which the general practitioner exhibits in just the directions here supplied. It is a great mistake for medical men to expect to know how to proceed in investigating these most difficult clinical cases without a specific guide as to how to ascertain the necessary facts. No matter how much one may know from reading or from a general observation on the subjects discussed, one is bound to go astray unless he has had long experience in taking notes under a competent specialist, or unless provided with a manual like the one before us. This supplies a precise knowledge of the steps necessary to pursue in arriving at a just estimate of phenomena of derangements of the nerves, and especially of disorders of the mind.—J. M. T.

PRACTICAL POINTS IN ANÆSTHESIA. By Frederick-Emil Neef, B. S., M.L., M.D., New York City. Surgery Publishing Company, 92 William Street, 1908.

In a small monograph of some fifty pages the author presents his impressions on the correct use of chloroform and ether, and of a very useful combination of these with ethyl chloride, known as anæsthol. Mention is made of the objection of some patients to the strength of the vapors at the start-out of the administration of an anæsthetic, and as to how to overcome this difficulty. These objections should be respected, as irritation of the throat with slight coughing merely emphasizes the fact that the introduction should be gradual. "Cardiac and Respiratory Collapse" are considered; the "Maintenance of the Surgical Plane of Anæsthesia"; "Some Important Reflexes"; "Vomiting During Anæsthesia"; the "Use of the Breathing Tube"; "Indications for Stimulation During Anæsthesia"; "Recession of the Tongue after Narcosis"; "Post-Operative Distress"; "Morphine-Anæsthol-Ether Sequence," and "Intubation Anæsthesia" are given attention. The repeated touching of the cornea with the finger for the purpose of obtaining the corneal reflex is rightly condemned. The anæsthetist is advised to constantly watch the rhythm and quality of the breathing, the color of the ear, and the character of the pulse.

This small volume contains many useful points for those in the habit of giving anæsthetics.—R. B. S.

CHRONIC CONSTIPATION AND ALLIED CONDITIONS. By J. Alexander MacMillan, B.A., M.D. Professor of Therapeutics, etc., in Detroit College of Medicine. The Burton Co., Kansas City, Mo. 1908.

Dr. MacMillan writes from the standpoint of a practical proctologist, and presents especially the therapeutics of mechanical agents, and gives his own personal experiences. He has a large subject and succeeds in covering the ground pretty completely in a brief, sensible way. The book is cheaply gotten up, but is exceedingly light in weight. It is eminently practical and ought to prove of much use to readers.—J. M. T.

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Clinical Lectures

PARENCHYMATOUS NEPHRITIS AND MULTIPLE VERRUCA (WARTS).[1]

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GENTLEMEN:—This young woman, age 27 years, occupation housewife, suffers from a disease common in young adults.

In order that you may be properly benefited by this conference we will give you in detail the history and physical signs.

Family History.—Parents are both living and well. She has three brothers, also living and in good health. Her only sister died at the age of twelve from scarlet fever.

Her grandparents all lived to be quite old. Two of her uncles died of nephritis and one aunt died of pneumonia.

Previous Personal History.—As a child she had measles, diphtheria and scarlet fever, which was followed by an attack of scarlatinal-nephritis. At the age of eighteen she had pneumonia, and typhoid fever at the age of twenty-two years.

Social History.—She is married for over twenty-four years, and is the mother of one child three years old. Labor was normal with no lacerations.

Habits.—Since her marriage she has formed the habit of using alcoholic liquors regularly. Usually from two to three bottles of beer or porter daily; occasionally takes whiskey, but never to the point of intoxication.

Present Illness.—About one year ago she took a heavy cold, and with it developed great pain in the lumbar region. Treatment gave her relief, but

[1] Delivered in the Clinical Amphitheatre Medico-Chirurgical Hospital.

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since then has always a constant pain in her back. She also complains of pain in the abdomen, nausea, anorexia, palpitation, and dyspnœa on exertion. Her bowels, as a rule, are constipated and the urine is scanty.

Physical Signs.—General examination shows a pale, poorly-nourished woman of medium height. The skin feels cold and clammy to the touch. The lymphatic glands are normal, and there are no signs of syphilis present. The eyes, nose and ears are normal, except that she complains of poor vision since the past two months.

Her teeth for mastication are good, but the tongue is coated and flabby.

The pulse is 92 per minute, the temperature 98° F. and respiration ranges from 26 to 30; it is labored and associated with a short cough on exertion.

Physical examination of the chest reveals mitral regurgitation with enlargement of the heart to the left, apparently involving the left ventricle only. The murmur is transmitted to the axilla, and is best heard at the apex of the heart.

Percussion and palpation reveals enlargement of the liver, extending about an inch and a half beyond the costal border. No other abnormal conditions can be elicited either over the abdomen or the chest. The ankles are œdematous and pit on pressure.

Urinalysis.—The quantity of urine voided in twenty-four hours could not be obtained owing to the fact that she is only a dispensary patient and does not measure the amount voided. Albumin is positive; sugar negative; specific gravity 1018; reaction acid; indican negative; diazo negative. A microscopic examination showed many granular and short hyaline casts and numerous cylindroids.

Blood Examination.—Leucocytes, 7800; erythrocytes, 4,200,460; hæmoglobin, 79 per cent.

Diagnosis.—From the physical signs present, the history of a previous attack of nephritis, dyspnœa on exertion, nausea, pain in the lumbar region, and from the findings of the urinalysis, we diagnose her condition as one of chronic parenchymatous nephritis.

This form of nephritis should be differentiated from acute nephritis, chronic interstitial nephritis, and amyloid or lardaceous nephritis. The points of difference are briefly and clearly shown on the blackboard.

Chronic Parenchymatous.	*Acute Nephritis.*
1. Common in young adults.	1. May appear at any age.
2. Usually follows acute nephritis.	2. Usually caused by exposure or acute diseases.
3. Onset gradual.	3. Onset sudden.
4. Heart nearly always involved.	4. Heart not affected.
5. Urine usually diminished in amount; may be increased.	5. Urine always diminished.
6. Specific gravity of urine diminished.	6. Specific gravity of urine increased.
7. Casts granular and few hyaline.	7. Casts hyaline with blood in urine.
8. Temperature normal.	8. Temperature elevated.

Chronic Parenchymatous Nephritis.	*Chronic Interstitial Nephritis.*
1. Common in young adults.	1. Occurs late in life.
2. Œdema well marked.	2. No œdema.

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Chronic Parenchymatous Nephritis.	*Chronic Interstitial Nephritis.*
3. Urine usually diminished; may be increased.	3. Urine excessively increased.
4. Albumin present.	4. Albumin very slight.
5. Specific gravity of urine slightly diminished or normal.	5. Specific gravity of urine diminished.
6. Casts granular and few hyaline.	6. Casts long hyaline.
7. Urine highly colored.	7. Urine pale in color.
8. Onset gradual but well marked.	8. Onset slow but insidious.
9. Duration from a month to five years.	9. Duration from five to twenty years.

Chronic parenchymatous Nephritis.	*Lardaceous Nephritis.*
1. Usually caused by acute nephritis.	1. Usually due to acute infectious and suppurative diseases.
2. Liver and spleen usually normal.	2. Liver and spleen involved.
3. Hyaline and granular casts.	3. Waxy and fatty casts.
4. Œdema present at once.	4. Œdema slow to appear.
5. Patient looks pale and anæmic.	5. Patient looks wax-like.

Pathology.—In this form of nephritis the capsule of the kidney strips off very easily, the cortical substance is increased in width, and the entire kidney is enlarged, appearing grayish in consequence of the anæmia caused by the swelling of the cells. Often in the more advanced stages of chronic parenchymatous nephritis the kidney becomes smaller in size, due to the degenerative changes taking place in the epithelial tissue, giving rise to cloudy swelling and fatty degeneration of the cells. The walls of the blood-vessels are thickened, due to the hyperplasia.

Etiology.—The cause of this woman's nephritis is probably originally due to the acute attack of nephritis she had after her attack of scarlet fever. Of course, it is also probable that an attack of pneumonia and typhoid fever aggravated the disease to a large extent, and that later the constant indulgence in alcoholic liquors brought on the chronic parenchymatous condition now present.

Alcoholism and other toxic agents are most frequently the etiologic factors of the disease.

Nervous strain and mental worry are other factors which predispose to the disease.

Treatment.—The selection of proper diet is all-important. Foods rich in proteids are interdicted, as well as all kinds of alcoholic liquors. Milk and broths, bread or toasted bread should be the chief articles of food. Skimmed milk and buttermilk are often better borne, and are sufficient to keep up the nutrition of the patient for a comparatively long time.

We will request this patient not to partake of meats at all, but to take only milk and well-cooked vegetables that are easily digestible.

She is anæmic and in need of a diuretic that at the same time possesses hæmatinic virtues, hence the prescription containing:

℞ Potassii acetatis ..... ℥ss.
Liquoris ferri et ammonii acetatis .....q. s. ad. ℥iij.
Misce. Signa: Two teaspoonfuls in a half tumbler of water four times daily.

For her constipation we will prescribe the combination known as Niemeyer's pill, which also possesses marked diuretic properties. It consists of:

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℞ Massæ hydrargyri,
Pulveris digitalis,
Pulveris scillæ, of each..... gr. j.
Misce. Fiat pilulæ No. j. Mitte No. xx.
Signa: One night and morning as required.

Prognosis.—The prognosis of this patient as regards cure is bad, but I believe she will be greatly benefited by treatment, and her life prolonged.

Patients suffering with this form of nephritis usually die in from three months to two years. Her age is in her favor, and, perhaps, by good care and proper attention to condition, she may live longer than two years. The outlook, however, is always poor in this form of nephritis.

MULTIPLE VERRUCA (WARTS).

THE next patient is a young girl, age 17 years. Nativity, United States; has been a sufferer from multiple verruca or warts for almost a year. Her hands, face and neck have been covered with dozens of warts, and quite a number are still present, but they are rapidly disappearing.

She was in excellent health until some fifteen months ago, when her mother noticed that she was nervous and inclined to be irritable.

Her appetite failed, the bowels became constipated, and she was a constant sufferer from headache and neuralgic pains in back and across the chest, the pain being more severe in the region of the spleen and at the apex of the left shoulder blade. Her complexion became sallow, and the skin exceedingly oily.

At the end of six months' indisposition a number of small warts appeared on the left hand and fingers. The right hand soon became involved, and upon which a good many more appeared than on the left hand. About the same time three verruca, or warts, the size of a large pea appeared on the right cheek and one on the left ala of the nose. All around the neck were scattered many small warts, which have already disappeared. The scars upon the hands are the result of caustics applied and some of the warts were afterwards curretted away. Most of the verruca, or warts, had a broad base with a smooth surface, the color of them being not unlike that of the surrounding skin.

Diagnosis.—The diagnosis, of course, is not difficult to make from the appearance of the warts in groups, and from the characteristic shape—being attached to the skin by a broad base, smooth surface, and the color of them being similar to that of the adjacent skin, we classify them as that variety of verruca known as verruca vulgaris.

Pathology.—Anatomically the different forms of warts differ to some extent, but all have a connective-tissue base, from which papillary excrescences spring. In the ordinary warts one or more papillæ became greatly enlarged and are supplied with dilated vascular loops and covered with more or less hypertrophied epidermis. The feliform variety of warts consist essentially of connective-tissue containing a minute capillary. In condylomata or venereal warts the papillæ are greatly hypertrophied, but the horny layer is usually absent or macerated.

Etiology.—The cause of this girl's warts is due to her constitutional disturbance. She has a marked gastro-intestinal derangement, and a disturbance

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of the trophic centres. Her school work has been too strenuous for both her mental and physical capacities, and as a result has left her a nervous wreck. The girl has all the physical and mental attributes to grow into a beautiful woman, but is too young to endure such strenuous mental work as required in the school she is now attending. Verruca may develop without any apparent cause, but they more often depend upon some constitutional disturbance than any other cause. Blood changes in young growing girls and boys are often the development of multiple verruca. Local irritation often causes the appearance of verruca, such as want of cleanliness or contact with various substances; friction, pressure and exposure to heat and cold may even produce them. Workmen in petroleum refineries are subject to warty growths, principally upon the hands and forearms. Condylomata or venereal warts, which are never a manifestation of constitutional syphilis, and should not be confounded with the vegetating syphiloderm, are caused by the irritation of the secretions of gonorrhœa and leucorrhœa.

Treatment.—It is advisable to first ascertain the cause and decide whether it is constitutional or due to some local irritation. If they are caused by some external irritation, upon the removal of the irritation the warts often disappear spontaneously. In this patient the disease is due to gastro-intestinal disturbance; hence I placed her on an occasional calomel purge, followed by a saline.

To correct the fermentation and lessen the irritability of the mucous membrane of the stomach and small intestines, I prescribed the following combination in the form of a capsule:

℞ Argenti nitratis,
Extracti hyoscyami, of each..... gr. ⅙.
Extracti gentianæ ..... gr. j.
Misce. Fiat capsula No. j. Mitte No. xx.
Signa: One capsule a half-hour before each meal.

At the end of ten days this prescription was discontinued, and the following combination was given for its direct alterative action on the skin, and also for its effect upon the digestive organs:

℞ Strychninæ sulphatis ..... gr. 2/5.
Liquoris acidi arsenosi ..... f℥ij.
Acidi hydrochloridi diluti ..... f℥ss.
Glyceriti pepsini .....q. s. ad. f℥iij.
Misce. Signa: One teaspoonful in a little water a half-hour after each meal.

This combination will also correct the condition of the urine indirectly by its action upon the stomach and bowels.

Locally, the following softens and assists in casting off the hardened epithelial tissue:

℞ Acidi salicylici ..... 3j.
Collodii styptici ..... f℥j.
Misce. Signa: Apply locally to the warts twice daily.

Prognosis.—More than three-fourths of the verruca have already disappeared, and in the course of a few weeks there will not one be present on the hands, face or neck.

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Original Articles

WOMAN IN THE BUSINESS WORLD.[1]

By E. S. McKEE, M. D.,
CINCINNATI.

The American Academy of Medicine, at its last meeting, held a very interesting symposium on this subject. Of the six papers read, all of which were of much interest and value, we will try, briefly, to give an idea of the contents of, in our mind, the most salient points in the choice paper of all, that by Dr. Otto Juettner, of Cincinnati, "As to the Future of the Race." The doctor said: "To give the thousands of shop girls, factory workers, etc., etc., back to the purposes of the human family is the greatest social economic problem of to-day. If this problem is not solved, and nature's intentions are thwarted by social evolution along artificial by-paths, a crisis is bound to occur sooner or later. It will be in the nature of an upheaval such as have periodically occurred in the history of mankind. Whenever the integrity of the race has demanded the return to natural conditions, the principle of racial self-preservation asserted itself, and brought about the regeneration which was necessary or the destruction which was unavoidable. The fall of the Roman Empire and the French Revolution were crises of this kind, which arose from economic and political conditions involving the most vital problems of racial existence. That we are even now approaching a crisis of some sort or another is plain to any one who compares the life of the modern man or woman with the life of the normal man or woman. Race suicide does not only refer to the actual insufficiency of the supply to make up for the loss. It includes the process of deterioration which man, under so-called modern conditions, is slowly but surely undergoing. The invasion of man's sphere by woman appears like a part of this process. As to the future of the race as such, I have no fears. I believe in the necessary survival of the fittest and the necessary destruction of the unfit. This principle supersedes the effects of any casual conditions or transitory states of a portion of mankind on the ultimate destiny of the whole race. The voice of one man may sway a whole century, the genius of an age may direct the thought of a hundred centuries; the necessary laws of nature last forever. Wherever and whenever woman is to play a part in the drama of life, let her be the true and loyal helpmate, but never the competitor or antagonist of man. When paradise was lost, woman was left to man to bring paradise back to him. A true woman can never be satisfied, except in the exercise of woman's own functions which, if I am permitted to quote the words of Louise of Prussia, are 'to love and be loved.' Whether as a dutiful wife, a loving mother, an apostle of sunshine at the bedside, or in the school-room as a guide and example for the young, her proper sphere is in the exercise of all those traits of character which, in their totality, constitute the true woman. Do we find her on the stump, where she harangues

[1] To find this paper in full, see Bulletin American Academy of Medicine, October, 1908.

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and is vociferously cheered by a sympathizing crowd of hysterical females, who, like herself, are women in the anatomic but in no other sense of the word?"

Woman in the Business World Affecting Health and Morals.[2]

One of the dangers to which unmarried women are exposed is a tendency to become eccentric, whimsical, caustic and cranky as the years pass. So great is this tendency that some students of the subject contend that every woman should marry, even if she makes a foolish marriage, so as to prevent the calamity referred to. A single woman of forty or over, if she has kept her poise and sense of proportion, is a very superior, if a very rare person. One of the best antidotes for this warping tendency—besides matrimony—is for her to have some steady work in business with both men and women associates. A business woman, especially in the higher class of work, is less liable to go wrong than her idle sister. She learns the realities of life and its dangers, can better take care of herself under temptation and danger, and is more to be trusted than the idle woman of the same class, who always hovers under the protection of her own home. A few women, under starvation wages, go wrong; possibly, a few more than would fall if they were idle. The idea that a business life, even at starvation wages, is better than domestic work is a distinctly unmoral, if not an immoral, tendency. The girl clerk is socially above the cook or second girl, although she is half as fortunate in every other particular—wages, physical labor, social protection, and general comforts, except the comfort of her pride. While this prejudice does incalculable injury to the unfortunate girls themselves, there is little ground for hope that it will disappear, so foolish are people when their foolish pride is touched. A young man may begin his business career most anywhere and not suffer, but ask a young woman to begin in the kitchen and she spurns you and takes a cheap clerkship at less wages than it takes to board her. I believe that the sense of independence and self-reliance that comes to women in business life saves the character of many women. These, I believe, outnumber those who go wrong on account of the temptations of their work. The business woman, charmed by independence and the luxuries that she can command, rarely accumulates money (which would be good business), and forgets that some day she may cease to earn, thus often missing those larger and more permanent joys to which she is entitled. This is her moral loss, to say nothing of her acquisition of some self-control, centered selfishness, which she has acquired. A business life increases the rebellion in a considerable number of women against the restriction which society places on their sex. This lessens her happiness and good health. A business experience for a woman does not unfit her for domestic life, nor does she prove a less useful housekeeper or less wholesome mother. She is probably less often a mother, and less repeatedly one than if she marries earlier. That it is most natural for women to marry is true. The race interests are thus best subserved; health interests are also best subserved by it, since it is a fact that those women are less sick and live longest who, after youth, marry, and who bear children not too often.

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[2] Norman Bridge, M.D., Los Angeles, Cal.: Bulletin American Academy of Medicine.

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A Sexless Substitute for Man.

The American Academy of Medicine, at its last meeting, held a symposium on "Woman in the Business World." Among the half a dozen good papers on the subject was one of especial worth by Dr. Otto Juettner, of Cincinnati, in which he dealt with the question as to the effect on the future of the race. The doctor said: "When she invades the sphere of man in the modern business or political world, she departs from the sex idea and becomes a sexless substitute for man. She destroys the physical and psychic elements of womanhood, without, however, being able to create the things which are supposed to take their place. She descends from a higher to a lower physiologic level, and soon shows the evidences of iologic retrogression. When she has fallen below the level of specific perfection, *i.e.*, the perfection of the species as expressed in the individual, nature takes care of the problem by entering an active protest in one form or another. There have always been women with masculine or non-feminine instincts. They were in the nature of freaks, and prove the rule rather than disprove it. Cleopatra of Egypt, Catherine of Russia, Madame de Staël, Emma Goldman and Mrs. Gunness were women who led a rather strenuous existence outside the sphere that has been sanctified by the wives and mothers of countless generations. Women, as a class, can never be anything but good imitators. Maternity, which is the purpose of woman's existence, makes woman a creature of sex in the most exacting sense of the word. Her whole physical life and make-up, from the time of puberty to the menopause, point to the fact that she is the embodiment of the sex idea. Nature intended her whole life, her ambition, her mode of living to be subservient to it. Nature is a relentless task-master. In as much as function is dependent on structure and perfection of structure is maintained by perfection of function, we see structure degenerate in the absence of proper function. We, therefore, conclude that woman must degenerate structurally and functionally in proportion to her deviation from her fixed physiological standard."

As Affecting Home Life and Marriage.[8]

This was the subject of the paper by Andrew Stewart Lobringer, M.D., Los Angeles. No one who has practiced medicine any length of time has failed to notice many instances of a morbid view among women in the business world, an inherent aversion to the sacrifices and self-denials of early married life, and to maternity itself. Home has little attractions for such women, and should they marry, the duties and obligations of domestic life are frankly shirked at every opportunity. Another class of women finding marriage unhappy from too pinching economics or from irritating differences which lead to distinct incompatibility, find independence and a certain relief in earning their own money and spending it without question. To such, employment is but a stepping-stone to separation and divorce. There are some to whom a desirable offer of marriage never comes. We must study to exalt the home life and get

[8] Bulletin American Academy of Medicine.

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our people out and away from gossipy boarding-house and apartment-house into cottages with gardens and flowers; from roaring trolleys and whizzing motors to green lawns and the quiet country air; from the heated cafés, with wine rooms and cheap orchestras, to cool sylvan gardens with well-rendered symphonies; from cheap sensational melodramas and problem plays to outdoor sports and fresh scenes. Some day our women, who are wandering far away afield in search of novelty and diversion, will drift back to their happier and wholesome domain—the home—and develop it, as only they can. Men will not solve things so problematic, but it must come from the women themselves. She, with her subtility and keen perception, will be the first to discover the evil tendencies and correct them. Another quarter of a century will see in operation influences which will spring from a changed sentiment among women as to their relationship in life. And as this point of view becomes adjusted to better ideals, we shall find women adjusting themselves to the changed conditions, and a nobler, securer, broader home life will be the final result; for women are, by every endowment of nature and of culture, the very embodiment of the home idea, and any concept of woman permanently divorced from home influences and *maternam ministriesis,* an anachronism as abhorrent as a solar system without its sun.

Woman's Rights Without Men's Duties.

In a symposium on "Women in the Business World," at the American Academy of Medicine, among a half dozen papers, all good, was one especially readable by Dr. Otto Juettner, of Cincinnati, published in the October number of *The Bulletin of the American Academy of Medicine.* The doctor, among many good things, says: "Even at the risk of being suspected of being an unpatriotic iconoclast, I call attention to one fact which is admitted on all sides except by those mostly concerned. The curious worship of women in this country is a form of national hysteria that made us the laughing-stock of all the world. I will cheerfully grant that American women unite the best elements of woman's character to be found anywhere on earth—the domestic traits of the German, the horse sense of the Englishwomen, the chic of the Parisienne, the cleverness of the Austrian, the fiery temperament of the women of Spain, and the physical charms of the maidens of Italy. This fact should lift the American man to a correspondingly high level of manhood. Woman is man's equal in her sphere, but not in his. Equality is a distinctively relative concept. Schopenhauer informed us many years ago that 'logic was not included in the feminine mind.' It is not surprising, therefore, that the (female) champions of woman's rights have never said very much, though they have talked a great deal. Every argument in favor of woman's so-called rights is necessarily a vicious circle of a generalization from limited premises. *Exceptio probat regulam.* The agitatrix in petticoats pleads for equal rights. She wishes to place men and women on the same level. In reality, she demands for women the rights and prerogatives of men without being willing to sacrifice the rights and prerogatives of women, or to assume the full duties and responsibilities of men. Therein lies the injustice, and the most palpable error in the

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argument. All rights and no duties is the battle cry. They want men's places and men's rights, and at the same time they glare at the rude men who do not give up their seats in the car or doff their hats in the elevator. The agitation in favor of woman's 'rights' is, in reality, a movement to dethrone her who is by nature a queen. A truly good womanly woman is the one adorable thing in all the world. As a woman, she is a living text-book of moral education for men. As a wife, she dignifies and makes human and holy what man shares with the brute. As a mother, she reigns supreme, for 'the hand that rocks the cradle wields the destinies of generations and ages.' I wish to say, and make the statement with all possible emphasis, that if at any time in the history of mankind men fell short of the ideals of humanity, the fault lay primarily with the women. Napoleon once remarked that the women, especially the mothers of the nation, are the makers of its history. The tendency of some women to be the equals of man, to claim his rights, without, however, being able to or willing to assume his duties, has been more strongly marked in this country than any other. It is largely the atttitude of men towards women in this country, a differential and staunch submission, erroneously called chivalry.

REPORT OF SOME GYNECOLOGIC ABNORMALITIES.

By JOHN A. McGLINN, A.B., M.D.,
Assistant Professor of Gynecology in the Medico-Chirurgical College; Gynecologist to St. Agnes' Hospital, Philadelphia.

The following cases are rare enough to justify recording:

Case I.—I was called late one night by a physician to aid in a labor case. The message requested that I bring instruments along, as the case would probably require a "cutting" operation. I found the patient actively in labor, and obtained the history that pains had been present for ten hours. In addition to labor pains, she had severe constant pain in the lower abdomen. On examination I found a small hard cervix, with no changes of pregnancy, and a very small external os. The uterus could be felt anterior, and seemed like a normal organ. In the left lateral vault the presenting part of the fœtus could be distinctly felt. The abdomen was enlarged to the size of pregnancy at term, fœtal movements and heart sounds were present. An examination of the vulva showed no abnormalities. I suspected abdominal pregnancy at term, and had the patient removed immediately to St. Agnes' Hospital. Preparations were made to open the abdomen. After the patient was anæsthetized another examination was made, and confirmed the findings of the previous one. After completing the examination a small opening about ⅛ inch in diameter was noticed to the left of the vaginal canal. A probe was introduced, and entered a cavity about four inches in length. The opening was then enlarged, and a finger introduced. Another cervix was then found. The os was dilated and the breech presented. An examination showed a double vagina and a double uterus. No communication could be found between the two vaginæ. Fœtal

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heart sounds could not be detected at this time, and the patient was delivered of a dead baby.

The case is interesting, not only from the fact of a double uterus and double vagina, but particularly because the impregnated side had never been penetrated.

CASE II.—Mrs. O. E., admitted to St. Agnes' Hospital, September 25, 1908. Diagnosis: Retroversion of uterus and prolapsed left ovary. Operation advised: Dilatation and curetment of uterus and abdominal section. On operation a thick septum was found dividing the uterus laterally from the cervix to the fundus. On abdominal section the uterus was symmetrical, but was about double the width of a normal uterus.

CASE III.—Miss S. C., admitted to St. Agnes' Hospital May 9, 1908. Diagnosis: Double pyosalpinx. An abdominal section was advised. Operation confirmed original diagnosis. After a difficult enucleation the operation was completed. Before closing the abdomen a final examination of the pelvis revealed upon the right side, posterior to the broad ligament, a small structure resembling a blood-vessel. No ligature was about the structure, but bleeding was not taking place. A further examination showed a clear fluid spurting at regular intervals from the free end of the vessel. I then realized that I had torn the right ureter in two. A search was then made for the distal end of the ureter, which was found running up along the anterior face of the broad ligament to near its top. After dissecting this end free it was found that the two ends could not be brought in apposition. I determined, if possible, to transplant the upper end of the ureter into the bladder. The lower end of the ureter was ligated. The bladder was drawn to the right side and stitched to the pelvic brim and to the apex of the broad ligament. A catgut ligature was carried through the wall of the ureter from within outward. This ligature gave me control of the ureter. Two small openings were then made into the bladder, one just at the point of its attachment to the broad ligament and the other two inches above this, near the fundus. The ligature on the ureter was now threaded on a pedicle needle. The needle was introduced into the lower opening of the bladder and brought out of the upper. The ligature was now unthreaded, and the needle withdrawn. By making traction upon the ligature the ureter was drawn into the lower opening of the bladder. After stitching the bladder wall to the ureter, the lower opening was entirely closed. The catgut ligature which controlled the ureter, not being tied, but simply looped through its wall, was easily withdrawn through the upper opening in the bladder, which was then closed. This technic for transplanation rendered a difficult operation comparatively easy. Gauze drainage was placed about the point of implantation, and the patient made a good recovery. For several months after operation the patient complained of a pulling sensation in the right side, but this has now entirely disappeared, and she is now in good health.

This case was one of abnormal position of the ureter. Instead of going underneath the broad ligament, as is usual, it ran over the top, and was caught in the mass involving the right tube.

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DON'T SWALLOW THE ENEMY.—DON'T TOUCH THE ENEMY.—DON'T BREATHE THE ENEMY.[1]

By FRANK T. WOODBURY,
Captain Medical Corps, U. S. Army.

UNTIL the American soldier came upon the field of history implicit obedience was the one requisite and bravery the only virtue demanded of the man in the ranks. Discipline meant a machine-like obedience. With our army of intelligent men, we add that a soldier must command himself.

Because of this intelligence certain facts may be presented for his understanding, and he is expected to exercise judgment and reason. He is not a machine nor can he be made one. For this reason, then, the sanitarian not only advises the commanding officer so that he can intelligently care for the health of his command, but he also teaches the soldier, so that he may put that spirit of understanding into his obedience which is the true meaning of patriotism.

A soldier has no more right to expose himself knowingly to disease than he has to rifle fire, except in obedience to orders. Foolhardiness is not bravery, and a reckless disregard of sanitary rules does not proclaim either a superior wisdom or a zealous patriotism.

In time of war large bodies of troops are gathered into camps and the soldiers are crowded together with only those conveniences that nature supplies.

The closer the crowding, the longer the stay on one camp site, the more unhealthy the troops will become, as there are no water mains, no sewers, no shelter. If it were not for these necessities cities would disappear. Every living thing, from microbes to men, kill themselves if compelled to remain in contact with the waste matters of their own bodies. Because of this a stationary army is always more or less sickly, while a moving army is a healthy one, since it leaves its filth and poisons behind it.

The soldier must contend with his own poisons without proper water supply, proper sewerage and proper shelter, and in the tropics and among the ignorant inhabitants of the poorer country districts he has to contend with certain diseases which are always present and which reach the proportion of devastating epidemics from time to time. These epidemic diseases spread rapidly, and have always killed and disabled many more men than bullets. Indeed, battles have been lost from this cause alone.

These enemies come not with blaring bands and flying banners. They sneak in as the spy, all unseen by sentinel and scout, till suddenly the epidemic breaks out, the enemy is discovered within our lines, and the camp is in an uproar and confusion, possibly ending in a rout.

The Board of Inquiry called to determine the character of the enemy, the

[1] Sanitary lecture delivered to soldiers at Fort Jossman, Iloilo, Philippine Islands; reprinted from pamphlet issued by Regimental Press of the Fourth Infantry. Approved for publication by the Surgeon-General's Office, Washington, D. C.

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method of his entrance and his point of attack, and to recommend measures to prevent his entrance can report as follows:

The following epidemic diseases are caught by swallowing:

DYSENTERY.—There are two kinds of dysentery. The tropical form is due to a microscopic animal, and the ordinary dysentery is due to a microscopic plant.

Dysentery can be caught only by swallowing the plant or the animal.

They both live in the intestines, and are passed out in great numbers in the bloody, mucous, bowel movements so characteristic of dysentery, and often long before there are any symptoms, even of diarrhœa. They can live outside the body in moist wet soil or water, and may be found in pools, streams, water tanks and coolers. They may be carried from sick to well by being smeared on personal belongings or the hands. They are most often found in water where the inhabitants use the same stream for all purposes—drinking, washing, laundering and sewage, without regard to contamination, and they are also found on green vegetables irrigated with such water or sewage.

ASIATIC CHOLERA.—This disease is caused by a microscopic plant called the comma bacillus.

Asiatic cholera can be caught only by swallowing the comma bacillus.

The comma bacillus lives in the stomach and intestines, and passes out of the body in great numbers in the rice-water bowel movements, even long after the patient has recovered from the acute attack. It is also found in the vomited material. It is carried most often from sick to well by food, which has been exposed in markets to the handling of multitudes, and one of whom may have just left a cholera patient. It may be smeared on clothing, bedding, eating utensils, and on the hands of nurses or friends. It lives perfectly in shallow wells and streams tainted by surface drainage.

TYPHOID FEVER.—This disease is caused by a microscopic plant, the typhoid bacillus, which has the power of very rapid motion.

Typhoid fever can be caught only by swallowing the typhoid bacillus.

The typhoid bacillus lives principally in the intestines, but it also can be found in the spittle, the urine, the perspiration, and the blood of patients, as well as in the bowel movements.

It lives very well outside the body, either dried into a dust or in wet soil or streams. It can even survive freezing, hence ice cut near a sewer's mouth may contain typhoid bacilli which, when thawed out the following summer, will give the fever, if swallowed.

Typhoid is spread through water contaminated by sewage; by drinking liquids diluted with such water, or by using eating utensils washed in it. It also may be communicated by handling typhoid patients or their personal belongings. Flies carry typhoid bacilli smeared on their feet, from patients or latrines to the food in mess halls, and oysters fattened in sewage-laden waters usually contain typhoid bacilli.

WORMS are animal parasites of various varieties. They differ in size very greatly, from tape worms twenty feet long down to the thread worm ⅓ inch long. They live and grow in the intestines, absorbing the food that should go

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to nourish the man, and their very small eggs pass out in the bowel movements in great numbers. They either develop into wigglers, and are taken up, in the drinking water or grass, by some herbivorous animal, in which they undergo further development, or they pass through one or more stages of development in fish or water insects.

The hook worm is an especial offender, and is the cause of Porto Rican anæmia, a disease that formerly killed numbers of the inhabitants of that island. It is found in soil in the United States and the Philippines.

The hook worm is peculiar in that it *can enter the body through the bare skin of the feet,* and finally finds its way to the intestines.

Worms are caught by swallowing their eggs.

All worms starve the body, and by certain poisons which they make the amount and quality of the blood is reduced.

Pigs, dogs, cats, some fish, and people with dirty habits, especially children, eat much that is dirty and liable to contain the eggs of intestinal worms.

If food be handled without washing the hands, and if pet animals be handled, it is possible to transfer an egg to the fingers and later to the mouth on the handkerchief, pipe, cigarette or piece of bread.

Sprue and Hill Diarrhœa are two forms of a grave chronic intestinal disease marked by an intense inflammation of the entire digestive tube with fermentation, gas and diarrhœa. Patients rarely get better until removed to the temperate zone. The cause is not known. They occur in certain localities in India and the Philippines, and evidence points to infection from water of mountain streams, when this is swallowed unboiled and unfiltered.

As a general rule, water used for drinking purposes should be filtered and boiled. *Boiled peas do not grow. Boiled microbes cannot give disease.*

Large cities which filter the water supply are, to a large extent, free from this class of diseases.

But *boiling water is the only safe method.* The best method of purifying surface water is to *filter first, and then boil,* before using it for drinking, cooking, or for washing dishes.

Dirty hands should be washed before eating or putting anything in the mouth, as neglect of this precaution is the next frequent cause of communicating these diseases.

Natives of tropical countries, the shanty man and backwoods man of our own States do not use toilet paper or similar articles, nor do they wash the hands frequently, nor do they bury their excreta, but attend to nature's calls anywhere that may happen to be convenient. Hence these diseases that grow in the intestines may be tracked into houses on the feet or smeared by their hands on anything they touch—on fruit, or cigarette, or table utensils. The soldier buying these things that are handled by unclean persons runs the risk of getting a dose of dysentery, or typhoid fever, or cholera, or worms, or he may have them smeared on his change, as money is a great source of spreading contagious disease.

Chinese farmers, and even some others, use dilute human sewage to sprinkle over their kitchen-gardens by means of dippers, so that the germs of these dis-

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eases may be found in between the leaves of lettuce and cabbage, or upon beets, parsley and radishes.

Careless nurses may transfer these diseases from one patient to another in hospital wards, in handling medicines, eating utensils, and diets.

Finally, crowding always favors the transmission of these diseases.

It is possible to *make good health catching by observing the following simple rules:*

Put nothing in the mouth that has been handled by unwashed hands, either your own or other people's. Eat no food that has *not* been *cooked;* that includes water and other beverages, non-alcoholic. *Eat no fruit* that has *not* been *thoroughly washed* with boiled water, unless picked from the tree by yourself.

Make it a military rule to *wash the hands before touching your food* and *do not drink* out of *bottles, public cups at fountains,* or in *railroad trains,* or in *barracks.*

To prevent flies increasing, first, *destroy,* that is, either burn or bury *all animal and vegetable wastes.* Do not urinate or defecate on the ground, because it attracts flies; this is particularly the case with manure in which flies breed. Secondly, *put screens over all food* that has been cooked and is ready to serve, and *screen* the *kitchens* and *mess rooms,* and, if possible, latrines. Therefore, do not defecate nor urinate anywhere except in properly prepared receptacles.

A patient with any of the above diseases, except worms and sprue, should be at once removed from the vicinity of his command. Should the disease prove epidemic, the entire infected command should be removed from the main body of the troops.

The Board further reports that *the following diseases* can be *spread* from person to person *by touching* the one who is sick, or by handling or coming in contact with something which he has touched, the poison entering through some break in the skin or mucous membrane.

GONORRHŒA.—This is a venereal disease caused by a microscopic plant. It grows only on mucous membrane and inside the body. It can be *transferred directly by contact with the catarrhal discharge or* indirectly by being *smeared on* the *hands, clothing, towels, handkerchiefs* or *toilette articles,* and *may* thus *be conveyed to* the *eyes, mouth,* or *nose.*

Gonorrhœal inflammation of the eyes is a serious disease, causing blindness in a period of ten days, and gonorrhœal inflammation of joints and of the valves of the heart is a frequent result of clap. Gonorrhœa, conveyed to wives, kills many women every day, and is the cause of about 60 per cent. of abdominal operations on women.

CHANCROID is a venereal ulcer whose effect is local. It is to be distinguished from the CHANCRE, or syphilitic sore, which is attended by blood-poisoning.

The *discharge from a chancroid* will *cause another* ulcer wherever it is *smeared on* the *skin* or mucous surfaces. It is therefore inoculable, and is spread by contact. It causes suppurating buboes.

SYPHILIS, OR THE POCK, is a venereal disease caused by a microscopic animal found in the discharge from an ulcer pustule, scab, sore, cut and even

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the blood of a syphilitic person, which will cause a chancre to grow wherever it enters the skin of a well person. A chancre is the first sign of syphilis, and is a small ulcer with a hard base.

When syphilitic patients suffer with sores in the mouth, or suppurating sores of the nose, the spittle and mucus contain the poison. The disease in this way can be transferred to a healthy person, if smeared on objects, or by kissing.

Syphilis can be transferred by the razors of barbers, by the caustic stick which they use, especially for sores, or by any of their brushes, soaps, etc., unless they use a boiled towel fresh for every man, scald their razors and brushes before every shave and do not use the same caustic for everybody. The barber also may communicate infection if his fingers are soiled. A company barber, unless careful about these matters, may infect several customers with syphilis after having shaved a syphilitic unknowingly.

Pipes, public drinking cups, towels or toilette articles used by other people are dangerous for the same reason.

Syphilis can be transferred by the dirty tools of a careless dentist, who does not clean them after using.

The bite of a person having a syphilitic sore mouth or sore throat will give syphilis, or if he be struck on the mouth in a fight by a man's fist, the cut produced on the fist will certainly develop a chancre.

SMALL-POX is a very violent inflammation of the body and skin with the formation of pustules and scabs all over the body, due to the presence of microscopic organism found in the pustules. It is highly contagious, and can be carried on any article that has touched the sufferer, and also by the air in his vicinity.

BOILS, CARBUNCLES, ERYSIPELAS and PUS in wounds are all due to several varieties of microscopic plants, which produce pus or matter. These plants are readily transferred by actual contact or carried around on clothing, utensils or hands. When pus dries, it becomes a powdered dust that blows about in the wind. These germs are found anywhere in the air except on mountain-tops and in mid-ocean. Hence they will get into any open wound and cause inflammation, unless special precautions are taken to prevent infection.

MEASLES, SCARLET FEVER, CHICKEN-POX and MUMPS are all due to unknown causes, but they behave like those which have a germ for a cause. Touching the patient or anything he may have touched will give the disease to one who has not had it before. Pet cats and dogs, toys, clothing, letters, bedding in sleeping cars or dirty lodging houses, may all transmit the cause.

LOCK JAW AND MALIGNANT OR ANTHRAX PUSTULE, are each due to a microscopic plant. The first is found in garden soil, the second on old rags, hides, uncleaned wool, etc. They may be rubbed into the skin or enter through a wound made by a dirty instrument, as a butcher's knife or a rusty nail, and can be transmitted to a well person who handles these wounds carelessly.

GLANDERS is due to a microscopic plant which grows in the nose of glandered cattle or appears in lumps under the skin called farcy buds. Cavalry men, teamsters and hostlers are liable to the infection when the animals sneeze into their faces, or it may be smeared on their hands or clothes.

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BODY LICE, TICKS, RING WORM, DHOBIE ITCH are best prevented by wearing underwear which has been boiled in the laundry, and by personal cleanliness, especially by frequent baths of the entire body.

The following rules will eliminate the above diseases:

Vaccination prevents small-pox. A virtuous life prevents venereal diseases, remembering also the necessity to avoid public drinking cups, careless barbers and dentists, and especially to avoid the use of other people's toilette articles, pipes, etc.

All wounds should be washed with a teaspoonful of sodium chloride, dissolved in a quart of water that has just been boiled (salt solution), and covered by a piece of cloth that has also been boiled fifteen minutes.

Keep away from all persons suffering with measles, scarlet fever, chicken-pox, mumps or small-pox, and receive no article of any kind that has been near them or handled by them unless it has been fumigated by some chemical gas or vapor, or boiled to destroy the contagion. Glandered animals should be promptly killed and buried.

The following diseases are carried from the sick to the well by means of blood-sucking insects:

MALARIA, caused by a microscopic animal in the blood; also YELLOW FEVER and DENGUE FEVER, whose causes have not been discovered, are each transmitted by the bite of certain varieties of mosquito, and only in that way.

BUBONIC PLAGUE, caused by a microscopic plant, is transmitted by the bite of fleas that infest rats, and also by the discharge from suppurating plague buboes, which may be smeared on hands, on clothing, or upon any article.

LEPROSY, caused by a microscopic plant, is believed to be transmitted by bedbugs and also by handling the patients, or by close association with them.

To prevent these a mosquito bar should always be used on the bed and houses should be screened to keep out the mosquitoes; all rats and bedbugs should be destroyed, and all persons ill of these diseases should be screened with mosquito netting, and isolated.

The following diseases are *caught by inhaling* dust containing the dried microscopic plants which cause them, and which are to be found in the spittle and mucus of the nose and coming from the lungs in great numbers when the patient coughs or sneezes:

Pneumonia, consumption (*tuberculosis*), *influenza, rheumatic fever, diphtheria, whooping-cough, quinsy* (*tonsillitis*), *spotted fever* (*cerebro-spinal meningitis*), *colds in the head* and *measles.*

The bacteria carried in the secretions of mouth, nose and lungs are conveyed into the air, by coughing or sneezing or spitting. Subsequently they may be breathed in, or fall to the ground to dry and become dust that is easily mixed in the air of rooms and city streets, and is carried by the wind.

To prevent these infections, keep away from the patients, do not handle them or things they may have touched. If absolutely necessary to touch them, change your clothing and disinfect it, wash the hands thoroughly and wash out the nose and throat with salt water. After breathing dust, especially from city streets, street cars, railway trains and ships, it is a good rule to gargle frequently

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with boiled water. It is a wise measure to keep the teeth clean and to prevent a sore mouth, which is an excellent place for bacteria to grow.

BERI BERI.—Its cause and method of catching are unknown, hence all above precautions should be taken in the presence of an epidemic.

The above simple rules are most efficacious and to these the trained sanitarian will add systematic quarantine, fumigation, medicated baths and complicated apparatus, all of which, however, are but an application on a large scale of these simple health rules which are most earnestly recommended to the American soldier.

Editorial

CHILD LABOR.

THE wrongs of the child wage-earner furnish one of the strongest commentaries upon the selfishness of human nature and man's inhumanity to man.

Many laws have been enacted in the interest of child labor, but there have been many obstacles to its progress. At the present time there are a considerable number of children under fifteen employed, in spite of all the laws enacted to prevent it.

Parents are too impatient for immediate results to support their children through a long apprenticeship, with little or no pecuniary gain for the time being. They cherish the pernicious idea of earning something without going to the anxiety of acquiring much technical skill.

The law in reference to the time of beginning work provides a school education for every child under fourteen years of age, while any under sixteen must present a birth certificate when they apply for employment. There is also a health law, which demands that the child pass a physical examination at the hands of some reputable physician.

In a majority of cases this health certificate fails in meeting its requirements, for the reason that a child forbidden to work by one physician on account of ill-physical development, has only to search long enough to find some illiterate and unscrupulous practitioner who will issue a certificate that he or she is capable of performing work.

There is also an impediment in the enforcement of the law concerning the age of the child. The age of the child is based upon the statements made by the mother, and the age is not based upon the intelligent estimate of the government inspector. If the child is only ten or eleven, the mother says fourteen or fifteen, and this is taken as the truth. In the minds of the parents, who are uninformed and ignorant, due to their lack of education, consider the education of their children subordinate to the financial gain of the child, and in this manner the child is made to feel that his or her value is determined by the amount of money it brings home at the end of the week. It is thus easily seen why we have so many young children in our country who are unfit for work, and the reason is obvious.

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It is in this manner that many of our factories, mills, shops, etc., are filled with children who begin work prematurely, and thus aggravate this evil at the present day. If we look into one of the shops where child labor is employed, we will at once observe that they are confined indoors the entire day, and are thus deprived of the fresh air and direct sunlight, which is absolutely necessary for their development and health. We notice that the nature of the work compels some to sit, stand, hurry or carry heavy loads the entire day. Others are forced to ply a broom heavier than themselves, which renders it necessary for them to be in a stooping posture nearly all day long in order that they may be better able to sweep under the various machines, tables, chairs, etc. Some acquire arsenical poison, due to their constant contact with the arsenical paper and paste in the wall paper factory; those who work in tobacco shops receive the evil effects of the nicotine and the injurious odors arising from the leaves. They also gradually acquire the habit of smoking, which soon depresses the circulation and respiration, and causes muscle-relaxation. The toxic effect of the tobacco is also observed in the inco-ordination and staggering gait of the child, which is due to the affection of the cerebral and spinal centres. Those who work with chemicals, such as cheap mercurial-gilding stains, suffer from the toxic effects, and this may result in paralysis. Other children suffer from burns, wounds, blindness, etc., inflicted while carrying red-hot irons along intersecting paths.

The reason that so many children are sent to work prematurely is attributed to the fact that it helps to alleviate the poverty and sufferings of their families, therefore it is cruel to deprive such a family of that increase of their weekly earnings, even if it be only two or three dollars. The reason that the toil, physical exertion and hard muscular efforts of the child should be abolished, apart from their suffering, is that they are not in a physical, mental and moral condition to take the burden of life on their shoulders and struggle for an existence. A child, during its infancy and youth, according to the laws of hygiene and physiology, must not worry about its struggle for existence, and must, therefore, be dependent on the protection of his or her parents or guardians. However, if the reverse conditions take place, and the child begins to work, he is thwarted, and for this reason premature toil is such a curse.

The great question now arises: What is the effect of premature labor upon a child? There are two effects, a physical and a moral effect, which are both highly detrimental to the child.

When a child arrives at its twelfth year it reaches the age of adolescence; that is a period at which the body experiences its most rapid development, and which lasts until about the eighteenth year. During this stage the various organs attain their full development; the bones and muscles grow both in thickness and extent. This is all accomplished through good exercise and nutritious food, but when the necessary exercise is prevented by the nature of the work performed by the individual, these muscles begin to atrophy, and there results a general weakening of the entire body. The child fails to develop physically, because it does not play; it fails to develop mentally, because it does not go to school and stimulate the gray matter.

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Sometimes the nature of the work requires a standing position the entire day, which finally terminates in flat foot; sometimes the work requires a sitting position, and this finally results in a spinal deformity. They finally attain general debility and a predisposition to rickets, tuberculosis and other pulmonary diseases, due to their contact with adults inflicted with these diseases, and in a majority of cases it is due when their occupations are attended by the inhalation of dust, impure air, obnoxious gases and lack of sunlight. Their condition is further aggravated by the brief time allotted to them for the mastication of their scanty meals. As a result of this they become "run down," their growth is stunted; they possess a thin, anæmic appearance, and have ill-nourished, diminutive bodies.

Other effects are the loss of education, which makes them undesirable citizens, the too early strain upon their nervous system, their startling spirit of independence because they feel that they form a support of the family, the loosening of family ties, roving in the streets, and a knowledge of vice and profanity which they secure from their constant contact with the men in their environment.

We can thus easily see the detrimental effects of this great evil, and the only way to get rid of it is to pass more rigid laws against child labor and for compulsory education.

Materia Medica and Therapeutics

ADRENALIN AND PITUITARY EXTRACT.

Dr. E. M. Houghton and C. H. Merrill, Detroit, deduce the following conclusions from their experiments upon the diuretic action of adrenalin: They state that the explanation of the increased urinary flow in anæsthetized animals depends chiefly on the increase in blood-pressure produced by the intravenous injection of the adrenalin solution or the pituitary extract in solution, rather than on a specific action on the secreting cells of the kidney. It was observed that the kidney enlarged considerably while the experiments were in progress. The specific action of this drug upon the kidney is less marked than a 1-per-cent. saline solution. Experiments upon the web of a frog's foot, on the inflamed conjunctiva of the rabbit and other animals, show positively that the pituitary extract does narrow the caliber of the arterioles. They also state that, since the pituitary extract possesses, as Shäfer believes, a specific secretory effect, it would naturally cause a great increase in the urinary flow when brought in contact with the secretory cells of the kidney. If it does have this specific action, it has it to a much less degree than sodium chloride itself. (Journal of the American Medical Association, November 28.)

ANÆSTHESIA, NITROUS OXIDE.

Dr. W. D. Haggard, Nashville, Tenn., discusses nitrous oxide anæsthesia and enumerates its advantages of quickness of action, comfort to the subject, almost immediate recovery, absence of lung complications, and improbability of later

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kidney, liver and heart complications. It is especially preferred in patients suffering from disease of these organs, and in those who have had uncomfortable experiences with other anæsthetics. It should not be employed, however, for patients with dilated hearts or extremely bad hearts, whether from valvular or myocardial disease. It is not suitable for plethoric and alcoholic patients. Its zone of anæsthesia is rather limited, though it can be employed for operations lasting half an hour or more. It is not always possible to secure the requisite skill for its administration, nor to command the apparatus and the amount of gas required for a lengthy operation. Its cost, also, is considerable. Young children do not always take it well, and it should not be used in case of narrow or abnormal air-passages, enlarged lymph nodes, goiters or enlarged tonsils and adenoids. There is occasional lividity and talking of the patient during its administration. The use of air and oxygen in combination is a modern improvement. No fatalities are reported from the combined use of nitrous oxide and oxygen. (Journal of the American Medical Association, November 7.)

ANTISEPTIC VAPORS IN TREATMENT OF PULMONARY PHTHISIS.

Dr. Lee urges the value of continuous phenol vaporization in pulmonary tuberculosis, and refers to an apparatus whereby it may be obtained. He quotes the case of a physician's wife, supposedly dying of acute tuberculosis, in which this treatment alone was followed some years ago. Gradually the symptoms of septic fever subsided, the lungs recovered, and the patient is now alive and in good health. (Journal of the American Medical Association, November 7, 1908.)

ANTITHYROIDIN IN BASEDOW'S DISEASE.

Dr. De Waele describes the case of a patient, twenty-six years old, who presented all the classical symptoms of exophthalmic goiter. After 70 cubic centimeters of antithyroidin had been employed, the subjective symptoms were considerably relieved, the pulse had dropped from 100-120 to 84, and the thyroid swelling was diminished one-third. As soon as the serum was discontinued the old symptoms returned, showing that the drops were undoubtedly responsible for the improvement. (Canadian Practioner, November, 1908.)

ATROPINE METHYLBROMIDE IN INFANTILE ECLAMPSIA.

Dr. Heimann reports the case of a boy, five months old, who suffered from broncho-pneumonia, and developed severe attacks of eclampsia during the course of the disease, so that his life was despaired of. Baths given during the attacks only gave temporary relief. Finally 0.0001 gm. ($\frac{1}{600}$ gr.) of atropine methylbromide was injected, and the attacks ceased almost at once. The following day it was necessary to give two more injections, after which no more convulsions were seen. Recovery then rapidly set in. (Münch. med. Woch., 1908, No. 21.)

BISMUTH-VASELIN INJECTIONS IN THE TREATMENT OF CHRONIC SINUSES.

Dr. Emil Beck, of Chicago, reported in April, 1908, in the Illinois Medical Journal, fourteen cases, most of them tuberculous, in which he had used an injection of a bismuth-vaselin paste. In all these cases he had secured healing. Other physicians have adopted Beck's method, and they also report successful cases. Of 22 cases of tuberculous sinuses treated by Beck's method, 9 were cured

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(in from seven days to one and one-half months), 7 were improved, 1 was unimproved, because of the presence of a large sequestrum. The remaining were under treatment but one week. (American Journal of Surgery, November, 1908.)

CANNABIN TANNATE (MERK).

Dr. S. A. Matthews, Chicago, records his experiments on this drug, and concludes that the preparation has no therapeutic action attributable to cannabis indica, but is practically inert. It also possesses so many undesirable properties, as compared to other preparations, to make it therapeutically superfluous. It is a greenish-brown powder, slightly soluble in water, slowly soluble in alkalies, and possessing a bitter and highly astringent taste. In experimenting upon dogs he found that the only symptoms referable to cannabis indica were nausea and vomiting. It possesses no hypnotic action. The author himself took four doses of a gram each at two-hour intervals, and aside from a very astringent feeling and some nausea, experienced no effects. (Journal of the American Medical Association, November 21.)

CARDIO-VASCULAR PROGNOSIS.

Dr. H. W. Cook, Minneapolis, emphasizes the importance of examination of the heart and circulation by life insurance examiners. Cardio-vascular diseases are increasing, and especially among the individuals who apply for life insurance, and he remarks that examiners are apparently to often satisfied regarding the cardio-vascular system when there is no heart murmur and no irregularity or increase of rate in the pulse. Competent examination should practically exclude heart and arterial diseases, apoplexy, and nephritis from the first three years. He gives specifications as to what the examination should be in the family and personal history of the applicant, and his physical inspection. He lays stress on the use of instruments, especially the sphygmomanometer, and the importance of urinary examinations. He summarizes in conclusion as follows: "The combined cardio-vascular diseases constitute the largest element in general mortality, and are even more important elements in insured mortality. The evidence of incipient cardio-vascular diseases are discoverable in many cases by careful attention to the details of the examination. Greater care and thoroughness in this particular would produce a large saving in insurance mortality, especially during the first five years." (Journal of the American Medical Association, November 14, 1908.)

CHLOROFORM ANÆSTHESIA.

Dr. W. D. Haggard, Nashville, Tenn., recommends chloroform in the following conditions on account of its special properties. These are: (1) In the treatment of certain convulsive seizures; (2) in obstetric practice; (3) in the presence of kidney lesions; (4) in elderly persons with dyspnœa; (5) in operations on the brain it is preferred by some surgeons; (6) in obstructed conditions of the trachea, œsophagus and larynx; (7) in deep cellulitis of the neck. It is to be particularly avoided: (1) In all conditions of heart weakness; (2) in all operations requiring the semi-recumbent or sitting posture, particularly in dental operations; (3) in minor surgical operations. The author urges the greatest precautions to be taken, and he attributes death due to overdosage, a direct poisoning of the heart by blood overloaded with chloroform. In giving chloroform we should observe the reflexes, circulation,

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color of lips and pupils. Since a simple convenient form of an apparatus for accurate dosimetric administration of chloroform has not yet been devised, it should therefore be administered by a trained anæsthetist. (Journal of the American Medical Association, November 7.)

GELATIN ENEMAS IN HÆMORRHAGES FROM TYPHOID ULCERS.

Dr. Michaelis (Med. klink., No. 2, 1908) details some excellent results from the use of gelatine in typhoid hæmorrhages, 250 to 500 c.c. of a five per cent. gelatin solution, at a temperature of 48° C. are injected into the bowel by pressure three to four times daily. (The Medical Fortnightly, October 26, 1908.)

ICE IN PYREXIAL DISEASES.

Dr. Louart reports the results and further observations of the application of ice over the heart. He says that the ice-bag should be kept in place day and night over the præcordial area, and then the results will be favorable. It lowers the temperature, it increases the force of the heart, it lessens the number of pulsations and stimulates diuresis. It is, therefore, a valuable resource in the treatment of pyrexial diseases. Good results have been obtained in the treatment of enteric fever by the application of an ice-bag over the præcordial area. A striking fall in the temperature has been produced in every case of enteric fever, gastric disturbance, pneumonia and pleurisy, and simultaneously the pulse became forcible, but the decrease in the number of beats does not always accompany the fall in temperature, so long as the pulse rate does not come down to a normal figure. Although the temperature may have fallen freely, the typhoid infection persists, and the application of the ice should be kept up. Recovery has begun when the pulse has regained its normal rate. (Detroit Medical Journal, October, 1908.)

INFANT FEEDING STANDARDS.

Dr. T. G. Allen, Chicago, states that the criteria by which we decide whether the baby is being properly fed are: Comfort, sleep, good-nature, or, at least, the absence of much crying after feeding; the appearance of the stools, which should be free from curds or mucus, soft, not unpleasant in odor and mustard-yellow in color; the regular gain in weight, and the gain in strength and development. When these conditions are not so, we must modify the feeding of the child by certain standards: (1) The daily proteid quotient. (2) The daily energy or energy quotient. (3) The nutritive ratio or the energy proteid ratio. The first of these is the most important, because it is essential to the building-up of the tissues and the infant needs proportionally more than the adult on account of its rapid growth. According to Allen, the minimum proteid quotient is from 3.5 to 4 and the maximum at from 5 to 6, or from 1 to 1.5 ounces of good cow's milk to the pound. If the milk contains less than from 3.5 to 4 per cent. proteids, the amount of milk will have to be proportionally increased. As regards the energy standard, he approves of that of Heubner, that in every 24 hours the baby should have sufficient food to provide 45 calories for each pound of its weight. The nutritive or proteid ratio, that is, the ratio between the proteid or tissue-building constituent and the energy-producing constituents of the food. Allen thinks it reasonable to begin with the ratio of about 9 or 10 (mother's milk averaging 9), and gradually decrease it to about 5 at the eighth or tenth month.

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Some of the sugars, starches or fats should be added to whole cow's milk to at least keep the proteid down to one-sixth of the total food, *i.e.*, a proteid ratio of 1 to 5. The practical application of these standards is figured out rather elaborately, and the system is very comprehensible, giving absolute control, not only of energy and proteid, but also of the ratio between the two, being easily changed to meet changing conditions, and simple in its calculating methods. (Journal of the American Medical Association, November 14, 1908.)

MAGNESIUM PLATES IN THE FIXATION OF WANDERING KIDNEY.

Dr. Goblet (Zentralbl. f. Chir., No. 40, 1908) describes a method in which the hold of the sutures in the fixation of a wandering kidney can be rendered more secure by the association of an absorbable magnesium plate, such as those that have been successfully applied by Payr in the closing of gaping wounds of the liver. After the kidney is exposed and the whole fatty capsule is cut away, the proper fascia being left intact, a plate of magnesium 4 centimeters in length, 1 centimeter in breadth, and 1 millimeter in thickness, is applied to the anterior surface of the kidney over the junction of the middle and anterior thirds of its longitudinal axis, and placed obliquely. The plate is perforated near each of its narrow ends. A silver wire suture of medium thickness is carried on a blunt needle through the parenchyma of the kidney and through the holes in the magnesium plate and the last rib, the ends of this suture being finally twisted together on the outer surface of the bone. The utmost precautions should be taken not to compress the kidney too tightly between the magnesium plate and the rib.

The author also describes an analogous method of dealing with wandering liver and spleen.

The prognosis of this plan of treatment is very good. (British Medical Journal, Nov. 7, 1908.)

MILK IN THE TREATMENT OF OBESITY.

Dr. Moritz in Münchner Med. Woch., records the results obtained by an exclusive milk diet for the purpose of reducing fat. The patients who went under this treatment lost from 16 to 46 pounds in from 15 to 81 days on the exclusive milk diet, while it had a favorable influence on complications on part of the heart and kidneys. The heart disturbances subsided and the pulse tension and rate declined. The author recommends this treatment because it is simple, cheap and easy to carry out. The treatment consists in giving the patient 3 to 5 pints of milk a day, in five portions, approximately a pint at breakfast time, a glass at 10 A. M., a pint at noon, another glass at 4 P. M., and a pint at 7 P. M. The milk may be diluted with water in order that it may quench the thirst of the individual. The only precautions to be taken are to prevent the constipation and the headache with depression if the weight drops too rapidly. (The Medical Standard, Nov., 1908.)

MUSTARD TREATMENT OF SCARLET FEVER.

Dr. S. Floersheim, Medical Council, relates the results obtained in the treatment of scarlet fever by mustard baths.

The first patient which he treated was a child, three years of age, having a severe attack of scarlet fever. The child was semi-conscious, with a temperature of 106.3° F., a pulse of 180 and respiration 47.

The child was then given a hot mustard bath at the temperature of 110° F.

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Three tablespoons of the powdered English mustard were thrown into about 30 gallons of water and the child was immersed in the water up to his clavicles, care being taken not to allow any water to enter the child's mouth. At the end of fifteen minutes the child was taken out and packed lightly and quickly, without drying, in a woolen blanket and put to bed. The child's skin was intensely red and there was a general improvement in the facies of the child. Another bath was given to the child six hours afterward followed by improvement; the pulse became regular, the respirations deeper and much slower. This was not followed by any complications and eventually the child made a rapid recovery.

The author states that the bath should be repeated in from three to six hours, if necessary, according to the severity and necessity of the case.

The following facts have been observed from this additional method of treatment:—

1. A decrease or disappearance of the convulsions.

2. A decrease in the elevation of the temperature.

3. A decrease in the rapidity of the pulse rate.

4. A shortening of the actual pyrexic stage of from three to fifteen days.

5. A noticeable decrease or absence of tonsillar, nasal, kidney and aural complications.

6. A more rapid and shorter exfoliating period.

7. An increase in the strength of the heart and pulse beats.

8. An increase in the depth of the respirations.

9. An increase in the general muscular tone of the patient.

10. A more rapid convalescent stage. (Dietetic and Hygienic Gazette, Nov., 1908.)

NITRIC ACID FUMES IN CHRONIC BRONCHITIS.

Dr. Campanella expatiates on the great efficacy of this treatment. The treatment consists in allowing the patient to inhale the steam from boiling water containing a few drops of nitric acid. These fumes are inhaled for 5 or 10 minutes at a time and in a short time the cough was arrested and expectoration reduced. He also observed favorable results on assimilation and blood production and the ultimate result was a complete cure. (Gazetta degli Ospedali e delle Cliniche, Milan, Sept. 13, 1908.)

OXYGEN IN THE TREATMENT OF NERVES AND VASOMOTOR DISTURBANCES OF THE CLIMACTERIC.

Dr. Oskar Frankl (Zeit. für phys. und diät. Therap., August, 1908) has made good use of this treatment in cases of nerves and vasomotor disturbances of the climateric, which are almost without exception associated with increased pulse tension.

The patient is placed into the bath in a half-lying position at a temperature of from 32° to 37° C. (89.6° to 98.6° F.), the bath contains from 23 to 30 litres of oxygen and the patient remains there for about ten minutes the first time, but this is gradually increased up to twenty or twenty-five minutes. The baths have a sedative action thus favoring sleep and a lessening in the sense of distress and excitement. They also lower the pathologically raised blood-pressure. (British Medical Journal, Oct. 17, 1908.)

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QUININE AND UREA HYDROCHLORID IN MALARIAL INFECTIONS.

Dr. Solis-Cohen calls attention to the following points: (1) The superiority of this salt over other preparations of quinine; (2) the periods of either six and one-half days approximately, or thirteen days approximately, during which patients prevously exhibiting irregular recurrences of paroxysms, or regular quotidian, tertian or quartian recurrences, remain free from paroxysms following a simple injection of about 1 gram (15 grains) of this salt; (3) the similarity between these periods of six and one-half and thirteen days, respectively, and the periods of cyst formation of sporozoite development in the sexual cycle of the parasite, as observed in the mosquito; (4) the diagnostic value of such injections both in proving and disproving malarial infection in cases in which parasites have not been discovered in the peripheral blood; (5) as a variant of the first point mentioned, the probable therapeutic superiority of this quinine salt in pernicious malaria is emphasized. (Journal of the American Medical Association, Oct. 31, 1908.)

QUININE SULPHATE AND BLACKWATER FEVER.

D. McCay, in a preliminary note (Glasgow Medical Journal, March, 1908), says the results obtained from investigations carried out on the hæmolysis of the red blood-corpuscles seem to have a very important bearing on the supposed action of "quinine" in causing blackwater fever. In health it has been found that the action of sulphates in any form upsets, for a time, the osmotic equilibrium that normally exists between the red blood cells and the plasma in which they float. In a series of observations on this action of different sulphates—quinine sulphate, magnesium sulphate, and dilute sulphuric acid—a very serious decrease was obtained in the total inorganic salts of the plasma, implying a serious decrease in the osmotic tension of the plasma. The red cells being impermeable, no change takes place in the number of their inorganic molecules; but, by endosmosis, water passes into them, causes them to swell up, and, if the decrease in the plasma is sufficient, eventually to burst and extrude their hæmoglobin. In blackwater fever the hæmolysis is due probably to three factors: (1) Injury to the stroma of the red corpuscles caused by the malarial parasites; (2) the presence of a hæmolysin; (3) administration of sulphates. (1) and (2) may be sufficient to produce blackwater fever, but (3) may become the precipitating cause when (1) and (2) are ineffectual—that is, the sudden lowering of the number of inorganic molecules in the plasma, due to the action of sulphates on the inorganic salts of the plasma, may become sufficient to produce a difference in pressure between the plasma and the injured red corpuscles which those corpuscles cannot withstand. Further research showed that, while sulphates caused a lowering of the resisting power of the red corpuscles to hæmolysis, chlorides caused an increase. In every experiment where quinine hydrochloride (particularly when combined with sodium chloride and dilute hydrochloric acid) was given, no fall in the salts of the plasma took place, but usually a well-marked rise. As malaria is the underlying factor in the cause of blackwater fever, and as, in order to get rid of that source of danger, quinine must be given, the rational indication for both prophylaxis and treatment is to avoid giving sulphates in any form, and to administer quinine in the form of the hydrochloride

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or acid hydrochloride. In addition to sulphates, large quantities of alkaline carbonates or compounds of alkalies with vegetable acids and potassium salts should be avoided. These all tend to lower the number of inorganic molecules in the blood, and therefore to bring the red corpuscles nearer their hæmolytic point. On the other hand, chlorides (quinine hydrochloride, calcium, chloride, and sodium chloride) have the opposite effect, and tend to increase the resisting power of the corpuscles. (British Medical Journal, October 31, 1908.)

SERUM TREATMENT OF CEREBRO-SPINAL FEVER.

Dr. Currie and MacGregor analyze the cases of cerebro-spinal fever in the Glasgow Fever Hospital between May, 1906, and May, 1908, in which the patients were treated with four different kinds of serum. The total number of cases was 330, of which 105 were treated with anti-meningococcic serum. The beneficial results obtained were a delay in any of the fatal issues, and there were a greater number of recoveries. In most cases there was at least one injection into the spinal theca after withdrawal of cerebro-spinal fluid. Repeated injections were usually subcutaneous; massive injections were necessarily so. The authors also state that the serum-treated patients, who survive the first ten days of illness, have a better chance of life. (London Lancet, October 10.)

SODIUM CITRATE TREATMENT IN GASTRO-INTESTINAL AFFECTIONS OF INFANTS.

Dr. Miserocchi (Gazz. degli Orpedali, No. 30, 1907) used sodium citrate in the treatment of the gastro-intestinal affections of infancy. The remedy was prescribed for altogether 67 children, between one and thirteen months of age, including 6 breast-fed babies, 42 with artificial nourishment, and 19 who received mixed food. Among these children, 17 suffered from gastric dyspepsia, 36 from gastro-intestinal dyspepsia, 9 from acute gastro-enteritis, and 5 from malnutrition. A tablespoonful of a solution (5.0 natr. citr. in 300.0) sweetened and sterilized water was given to the breast-fed infants immediately after nursing. In the cases of artificial nutrition the solution was added directly to the milk. An attempt was made in the case of 9 infants to administer the citrate without regulating the diet, but in these the improvement in regard to the vomiting and stools was very inconsiderable. In the remaining 58 cases the necessary hygienic and dietetic restrictions were applied, together with the administration of sodium citrate, with very favorable results in 40 cases. No special effect of the citrate could be demonstrated in the remaining 18 cases. The remedy had a very prompt action in dyspepsia and malnutrition; the vomiting subsided after a day or two, the stools became normal, and the meteorism disappeared. The effect was not nearly as prompt in gastro-enteric disease. In a general way, the action of the remedy is regarded as very favorable by the author, especially because sodium citrate is entirely harmless. (Medical Review of Reviews, October 25, 1908.)

SODIUM SALICYLATE IN THE TREATMENT OF SYMPATHETIC OPHTHALMIA.

Dr. Widmark discusses the great benefits derived by the use of this drug in his eye clinic. He gave from 2 to 4 gm. (30 to 60 grains) of the sodium salicylate during the day, with atropin and hot fomentations. The first pa-

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tient was a boy of five, whose eye required enucleation from a traumatic injury. The sympathetic inflammation subsided entirely under this treatment, and the child was dismissed in eight weeks with vision of 0.5. In the second case, the sympathetic inflammation developed, with fever, five days after the enucleation of the injured eye. On recovery, the visual acuity was 0.8. The third patient was a young man with gonorrhœal conjunctivitis with perforation of the cornea. The sympathetic ophthalmia took an unfavorable course, but even in this case the salicylate improved conditions remarkably in a daily dosage from 8 to 9 gm. (120 to 135 grains), the inflammation completely subsiding, although cataract developed. As a rule, the sympathetic ophthalmia is not seen until it is well underway. In 3 of the 17 cases no benefit was observed for the salicylates, while 67 per cent. recovered under this treatment. In 5 cases the salicylates had been given for some time before the development of the sympathetic inflammation on account of iridocyclitis in the injured eye. This probably contributed to attenuate the intensity of the sympathetic process. (Journal of the American Medical Association, November 7, 1908.)

STYRACOL THERAPY IN BRONCHOPNEUMONIC AFFECTIONS.

Drs. A. Ferrata and A. Golonelli, Medical Clinic of the University, Parma (Gazzetta Internazionale de Medizina, 1908, No. 14, p. 159), report the effect of styracol, which is a guaiacol preparation, upon the mucous membrane of the bronchi. This drug has a decided action, and after its use the night sweats will be less annoying and the fever will drop. The expectoration is made thinner and lessened in amount.

The general condition of the patients were improved, and their coughs were alleviated in their severity. Styracol was also used with good results in various intestinal affections. The authors recommend styracol particularly owing to its effect upon the severity of the bronchial catarrh and its antipyretic action. (The Medical Fortnightly, October 26, 1908.)

SUPRARENAL PREPARATIONS IN URINARY INCONTINENCE.

Dr. Zanoni records now the results obtained of treating 134 cases of urinary incontinence with the substance of the suprarenal gland. Among these patients 66 were cured, 21 were improved, 14 were better during the duration of the treatment, 21 were not changed; in 12 cases the statements were not sufficiently accurate for classification. The best results were obtained in those cases which came under treatment early, while a considerable share of the failures were due to deficiencies in the treatment, especially too short a duration.

The treatment should be interrupted for several days at a time, in order to guard against habitation, and the dosage of the remedy must not be too small. The only ill effects obtained by giving these preparations on an empty stomach were slight abdominal pain and a tendency to vomit. These symptoms promptly subsided when the dose was diminished. (The Medical Standard, November, 1908.)

THE X-RAY IN NEUROLOGY.

M. H. Kassabian, Philadelphia, finds that the x-ray is a valuable aid to the neurologist in detecting the cause of nervous symptoms due to disease of the bones, as an adjunct to other methods of diagnosis. It enables us to recog-

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nize the causes of troublesome pressure and other symptoms dependent on osseous diseases and malformations, such as epiphysitis, osteitis, and periosteitis, old and unreduced fractures, excessive callus formation, bone tumors and exostoses, atrophy and hypertrophy. The osseous changes in acromegaly and cretinism are well brought out in skiagrams, which are also of paramount importance in recognizing changes in the arthropathies, spinal column disease, and like conditions. Brain tumors, clots and cysts are not so satisfactory, being inclosed in a bony cage and at an uncertain distance from the plate, but similarity of symptoms from aneurisms and mediastinal tumors are frequently cleared up by a skiagram. The skiagraphic detection of foreign bodies will frequently explain existing neurologic manifestations. The x-ray has been of great service in dental studies, and unerupted and malplaced teeth causing headaches, neuralgias, etc., are readily detected by its aid. The therapeutic action of the ray is shown in its analgesic action, palliative, and sometimes curative effects in neuralgia, and in its causing absorption or decrease in size of various growths and neoplasms, thus mitigating painful pressure symptoms. Kassabian thinks that further studies and advanced methods may show a still wider range of usefulness. (Journal of the American Medical Association, August 29, 1908.)

TRANSPLANTATION OF VESSELS, ORGANS AND LIMBS.

Dr. Alexis Carrel, New York, gives an account of the experimental work on animals in auto and heterotransplantation of vessels, organs, etc. He shows that vascular suturing, under aseptic conditions and correctly applied, gives excellent results, but a fault of technic, even very slight, can be followed by obliterative thrombosis. Success depends less on the way of handling the needle or passing the threads, than on a knowledge of the causes determining a deposit of fibrin in the line of anastomosis, and their removal. Occasionally after transplantation of veins as a substitute for arteries, late obliteration may occur, hence this procedure seems to be a little less safe than the direct anastomosis of artery with artery. Carrel finds it possible, however, to preserve the vitality of extirpated arteries in Locke's solution at low temperature for some days or weeks, so that good results can be obtained after transplantation, though marked histologic changes take place. Other methods have been less successful. It is not always true, moreover, that the transplanted vessel must be from the same species of animal, but the success is greatest when the species are most closely related. Experiments with transplantation of various whole organs, such as the kidney and spleen, with re-establishment of their circulation by vascular anastomosis, have also been successful and transplanted kidneys have functionated normally. In case of glands like the thyroid, parathyroid and ovaries, the re-establishment of the circulation by anastomosis is hardly necessary, though in case of the ovary it might be advantageous. In heterotransplantation of the intestines the difficulty is to avoid infection which caused the failure of both of Carrel's experiments of this nature. Heterotransplantation of rather extensive anatomic regions, such as the ear and scalp, with their artery and vein, has been successfully done in a dog, and Carrel has succeeded in transplanting a leg from one dog to another. The difficulties here are chiefly surgical, and he

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says if further experiments in this line sufficiently demonstrate that the functions of the transplanted limb are reestablished, it may be permissible to try this operation in a suitable case on man. In a general way, however, it is necessary to emphasize that even a method that gives excellent results on animals must not be directly applied on man. There are marked anatomic and physiologic differences between the human tissues and organs and those of the dog and cat, and the methods should be modified accordingly. The experiments he records have been performed within the past two years, and it is too soon to tell what may be their practical value. (Journal of the American Medical Association, November 14.)

TREATMENT OF CHRONIC URETHRITIS BY ZINC IONIZATION.

Dr. Fenwick reports two cases in which zinc ionization treatment was followed by marked success. The cases were chronic and of long standing. After drying the urethral canal, a long, straight probe was wrapped with fine lint and soaked in zinc sulphate solution (2 per cent.) and passed through a cannula inserted in the urethra. The end of the probe was connected to the positive pole of a constant current battery and the negative pad was placed under the loins. Two milliampères of current were passed through for ten minutes. This treatment is repeated a few times until the discharge is stopped. The result is an immense improvement in both mental and physical health of the patient. (British Medical Journal, August 15, 1908.)

TREATMENT OF PERNICIOUS ANÆMIA.

Dr. L. Nicolayson gives an account of a case of pernicious anæmia treated by Crawitz's method. The patient was a man, thirty-three years old, who was admitted to the hospital after suffering for five weeks from anæmia and weakness. All the symptoms manifested by the patient were that of a typical case of pernicious anæmia. Treatment consisted of a strict diet of milk and vegetables, daily enemata, with arsenic and hydrochloric acid given by the mouth. Lavage of the stomach was not performed, owing to the strenuous objections on the part of the patient. After eight weeks in the hospital and a month's holiday in the mountains his general condition was excellent. He no longer felt dyspnœa on slight exertion, the temperature became normal, and the pulse was 68-80. The blood count showed 4,235,000 red cells and no abnormal cells, as compared with 1,300,000 red cells and numerous microcytes and megalocytes, and a marked poikilocytosis and polychromatophilia on admission to the hospital. The success obtained in this and similar cases tends to confirm the view that the disease is a toxæmia, caused by a deficiency of hydrochloric acid in the gastric juice and a possibly subsequent splitting up of albuminous molecules into toxic bodies rather than to a primary disease of the blood or blood-forming organs. (The Lancet, November 7, 1908.)

UROTROPIN TREATMENT OF LUMBAGO OF FEBRILE AFFECTIONS.

Dr. Franz Weitlauer, in (Monatsh. f. prakt. Dermat., Vol. 39), greatly praises the use of Schering's urotropin. This drug does not develop an odor of ammonia or formaldehyde which is offensive to patients, as is done by some of the commercial hexamethylentetramins when they stand for some time.

He recommends urotropin especially in influenzal lumbago and the lumbago

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which occurs at the beginning of acute inflammations of the respiratory tract and angina. It is also highly beneficial in spinal neurasthenia with phosphaturia and lumbar fatigue and in all forms of lumbago. Patients are relieved of their pain just a few hours after taking the drug.

This drug acts by its uric acid solvent, and its disinfectant properties. We must assume either a direct action of the urotropin circulating in the blood upon the lumbar region or else an effect from the formaldehyde reabsorbed through the urinary mucosæ.

The author also considers this drug valuable in ordinary influenzas. He combines six-grain doses of urotropin with opium-ipecacuanha-sodium-salicylate in coffee. (Buffalo Medical Journal, October, 1908.)

USES OF ICHTHYOL IN THE PRACTICE OF GYNECOLOGY.

Dr. Chesner directs attention to the excellent results obtained by the use of ichthyol in gynecologic practice. It is of decided benefit in congestion of all kinds, in inflammatory exudation in the genital region, chronic parametritis, inflammations of the ovary and Fallopian tubes, erosions of the cervix, cystitis, the various manifestations of gonorrhœa, and anal troubles. This is due to its bactericidal properties and power of relieving congestion. Ichthyol has also also proved valuable in rectal affections, fissures, fistulæ, piles, vulvar pruritis and eczema. (British Medical Journal, October 3, 1908.)

X-RAYS AND HIGH-FREQUENCY IN THE TREATMENT OF LEPROSY.

Dr. Matthews reports seven cases of leprosy treated with the x-rays, and claims by the results obtained that it is a valuable agent in all forms and stages of the disease. (Indian Medical Gazette, Calcutta.)

X-RAY TREATMENT OF EXOPHTHALMIC GOITER.

Dr. C. Thurston Holland, M.R., C.S., etc. (Archives of the Röntgen Ray, July, 1908) reports the results attained in the cure of exophthalmic goiter by the therapeutic action of the x-ray. He reports great benefit, especially in regard to the immediate drop in the pulse rate and its reduction; the amelioration of the muscular tremors and general nervousness; the reduction of the circumference of the neck in some of the cases. The exposures were of ten minutes' duration, the rays being filtered through two layers of thick boiler felt in order to prevent radiodermatitis, and were applied on alternate sides of the neck, two or three times weekly, according to the effects noted. (Medical Review of Reviews, September 28.)

YEAST AS A DRESSING FOR BURNS.

Dr. Plantier (Sem. Méd., November 6, 1907) reports the value of yeast as a very successful dressing for burns. He uses the yeast either fresh or dried, made into a paste with tepid boiled water, sterilized gauze bandages being impregnated with it. After the burn is disinfected these gauze bandages are applied and kept in place by lightly applied bandages, in order to prevent compression. If necessary, this dressing may be changed every day, or else every three or four days. The results obtained are exceedingly good—a rapid cure without any cicatricial deformity. (British Medical Journal, July 25.)

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Book Reviews

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY AUTHORS AND SUBJECTS. Second Series, Vol. XIII. Periodicity—Prussia. Washington Printing Office, 1908.

This large volume of 929 pages is an index catalogue to the library of the surgeon-general's office. The index is of the utmost value as it enables one to find all the works and literature on a medical subject which a writer may desire. It covers the ground from Periodicity to Prussia, mentioning all the works in the various languages dealing with the respective subjects, and gives references to books, pamphlets, and articles in periodicals.

ANNUAL REPORT OF THE PENNSYLVANIA STATE COLLEGE FOR THE YEAR 1906-1907. From July 1, 1906, to June 30, 1907. Harrisburg, Pa.: Harrisburg Publishing Co., State Printer, -1908.

This volume is divided into two parts. Part I gives the reports of the various departments of instruction, and includes the treasurer's report. Part II contains the Agricultural Experiment Station.

This work states clearly just what work has been performed in the various departments, and the results attained. Therefore in perusing this volume the reader is informed just what work is going on at the Pennsylvania State College.

DEPARTMENT OF COMMERCE AND LABOR BUREAU OF THE CENSUS. S. N. D. North, Director Mortality Statistics, 1906. Seventh Annual Report. Washington Government Printing Office, 1908.

This book gives a report of the mortality statistics in the registration area of the United States. The death rates have been stated separately for the black and white population where this was rendered necessary. Throughout the book are many tables which show the number of deaths, and a comparison of their numbers is made with those of preceding years. Also shows the different death rates caused by the various diseases in the registration area. Maps and diagrams also indicate the distribution of the population.

This work, as a whole, stands preëminently as the best book for the purpose of securing mortality statistics.

TRANSACTIONS OF THE THIRTY-THIRD ANNUAL MEETING OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION, held in Columbus, Ohio, October 8-10, 1907. Cincinnati: The *Lancet-Clinic*, 1908.

The contributers to this book have presented the various subjects from their personal point of view. Some of the important and interesting subjects treated are: "When Should Gastric Ulcer be Treated Surgically?" "A Résumé of Gall-stone Factors," "The Treatment of Scarlet Fever as a Streptococcic Disease," "Alimentary Albuminuria," "Treatment of the Stump in Appendectomies," "Pregnancy when Complicated by Tuberculosis."

The work sums up the modern thought and practice, and therefore can be confidentially consulted concerning the subjects treated. The writers of the articles have had wide experience, and therefore are enabled to speak confidentially on the subjects discussed.

THE WONDER BOOK OF MAGNETISM. By Edwin J. Houston, Ph.D., Author of "The Wonder Book of Volcanoes and Earthquakes," "The Wonder Book of the Atmosphere," "The Wonder Book of Light," etc. With 77 Illustrations. Frederick A. Stokes Company, Publishers. New York.

The science of magnatism, one of the most important branches of physics, has been described by the author in this handsome volume in a very interesting manner. In order to elucidate the difficult explanations with regard to the theory and explanation of the magnetic power, he has inserted a number of fairy stories which serve their purpose well. The author has traced the development of the knowledge of magnetism from the ancients to the present time, relating all the research work by the various pioneers in this broad field, and theories that were propounded to explain this invisible and mysterious force. He has presented the facts with scientific accuracy and in their correct historical context. In dealing with this force he also describes the cause, distribution, and peculiarities of the earth's magnetism. Other interesting chapters are: "The Auroral Light," "Mariners' Compass," "The Great Twin Brothers," "The Talking Newspaper," "Magnetism and Magic."

The chapter especially interesting is, "Have Magnets Healing Powers?" In answering this question the author proves and states that this force is incapable of producing any effects whatever on the health of the human body.

I venture to say that the young reader, after a perusal and digestion of the information contained in its pages, will recognize at length that this intricate subject has received an elucidation to which it had previously been a stranger. This book is certainly the best that has appeared on this subject.

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INDEX

MONTHLY CYCLOPÆDIA SECTION

List of Contributors

BARR, SIR JAMES, 1.
BERKLEY, HENRY J., 163, 612.
BOLDT, H. J., 165.
CABOT, RICHARD C., 125.
CHRISTIAN, H. M., 476.
CORNELL, WALTER S., 114.
DARLINGTON, THOMAS, 649.
ENGLAND, JOSEPH W., 151.
ERCK, THEO. A., 156.
FOULKROD, COLLIN, 412.
FOX, L. WEBSTER, 465.
GIBB, JOSEPH S., 531.
GILDERSLEEVE, NATHANIEL, 602.
GORDON, ALFRED, 284, 611.
HANSELL, HOWARD P., 49.
HENRY, FREDERICK P., 265.
HUTCHINSON, WOODS, 8.
KOLIPINSKI, LOUIS, 468.
MacCOY, ALEXANDER W., 51.
MARTIN, COLLIER F., 591.
MILLS, CHARLES K., 329.
MORRIS, ROBERT T., 393.
O'MALLEY, AUSTIN, 596.
OSBORNE, OLIVER T., 397.
POSEY, WILLIAM CAMPBELL, 460.
RANKIN, GUTHRIE, 97.
REMINGTON, JOSEPH P., 149, 402.
RING, G. ORAM, 601.
ROBERTSON, W. E., 670.
ROBINSON, BEVERLY, 285, 482.
ROTH, THOMAS MORGAN, 521.
SAJOUS, CHARLES E. DE M., 20, 29, 119, 159, 201, 281, 345, 407, 537, 672.
SCHAMBERG, JAY F., 60, 110, 414.
SCARLETT, RUFUS B., 665.
STEWART-COGILL, LIDA, 536.
TAYLOR, HOWARD C., 168.
TAYLOR, J. MADISON, 27, 52, 175, 275, 472, 676.
VINEBERG, HIRAM N., 166.
WALSH, JOSEPH, 528, 585.
WILCOX, REYNOLD WEBB, 457.
WILLIAMS, T. A., 340, 486, 608.
WOODBURY, FRANK, 659.
YOUNG, JAMES K., 343.

Names of Authors Quoted During the Year 1908.

Adams, J. D., 70.
Alcindor, J., 130.
Alger, E. M., 483.
Allyn, H. B., 132.
Anders, H. S., 139.
Arnold, H. D., 221.
Arnold, V., 419.

Babler, E. A., 229.
Badger, G. S. C., 289.
Bainbridge, W. S., 354.
Bálint, R. and Engel K., 486.
Ballard, C. N., 611.
Balloch, E. A., 356.
Barbour, M., 176.
Barnabo, 290.
Baumgarten, 31.
Baumgarten, P. v., 127.
Beal, F. E., 134.
Beates, Henry, 58.
Beaty, J. H., 192.
Beck, E. G., 170.
Benjamin, A. E., 129.
Bernart, W. F., 419.
Bernheim, B. M., 134.
Bevan, A. D., and Smith, J. F., 418.
Blake, J. E., 71, 416.
Bloch, W., 138.
Boas, I., 354.
Boinet, E., 138.
Bond, 138.
Bonney, Victor, 349.
Bossi, M. L. M., 87, 677.
Bowers, C. E., 421.
Bradshaw, 177.
Braga, A., 137.
Brav, A., 176.
Bristow, A. T., 222, 414.
Broadbent, J. F. H., 351.
Brock, J. H. E., 187.
Brown, P. K., 43.
Bryant, W. S., 75, 90, 228, 356.
Bulkley, L. D., 227.
Busch, F. C., 543.
Busch, Leonard and Wright, 543.
Butler, W. J., 192, 195, 549.

Caldwell, E. W., 93.
Calvert, W. J., 186.
Campbell, C. Macfie, 223.
Carhart, W. M., 423.
Caro, L., 674.
Carrière, C. de la, 677.
Carter, C. E., 226.
Casselberry, W. E., 40, 546.
Cautley, E., 83.
Cerny, S., 142.
Chase, R. F., 78.
Cheney, W. F., 135.
Claisse, P., 172.
Clark, J. G., 59, 351, 417.
Clark, W. Irving, Jr., 169.
Clock, R. O., 143.
Clunet, 349.
Codman, Charles A. E., 60.
Coffin, T. H., 290.
Coggeshall, F., and MacCoy, W. E., 137.
Coley, W. B., 353.
Conner, L. A., 288.
Connor, Leartus, 290.
Crane, A. W., 175.
Cunningham, H. H. B., 545.
Curschman, H., 183.

Davis, A. E., 483.
Davison, R. E., 542.
Dench, Edward B., 180.
Dent, E. A., 82.
Dercum, F. X., 89.
Diller, Theodore, and Wright, George J., 356.
Downes, William A., 135.
Drummond, D., 86.
Duncan, H. A., and Illman, G. M., 192.

Eddy, I. H., 91.
Eisendrath, D. N., 44.
Engel, K., 486.

Fabre, J., and Thévenot, L., 481.
Fabyan, M., 70.
Falkenstein, 79.
Findlay, L., 484.
Forsyth, D., 292.
Fowler, E. P., 675.
Francke, 36.
Freeman, R. G., 484.
Freudenthal, Wolff, 419.
Friedberg, S. A., 90.

Galloway, J., and MacLeod, J. M. H., 353.
Gardiner, F., 171.
Gaulejac, R. de, 356.
Getty, S. E., 37.
Geyser, A. C., 424.
Glastion, E., 85.
Goldan, S. Ormond, 355.
Goldscheider, 127.
Good, R. H., 77.
Goodall, H. S., 546.
Grace-Calvert, George A., 413.
Gradle, H., 31.
Granet, A., 80.
Grant, S. G., 543.
Graves, A., 138.
Graves, W. P., 178, 196.
Greene, C. L., 414.
Griffin, O. A., 182.
Grober, 352.
Grunberg, K., 195.
Gubb, A. S., 42, 541.
Gullan, A. G., 612.
Gunn, J. A., 541.
Gwyer, F., 288.

Haig, A., 348.
Hall, F. de H., 549.
Hall, R. B., 423.
Hallé, J., 291.
Harbin, R. M., 423.
Harland, W. B. G., 83.
Harmer, L., and Glastion, E., 85.
Harrison, R., 185.
Harrison, W. H., 84.
Hart, C., 289.
Hart, E. C., 182.
Hartsell, M. B., 673.
Haseltine, Burton, 191.
Hecht, D'Orsay, 92.
Henry, A. G., 131.
Herrick, J. B., 172.
Hertzler, A. E., 134.
Hill, I. L., 34, 89.
Hirsh, A. B., 59.
Hoffman, R., 421.
Hutchinson, R., 418.

Illman, G. M., 192.
Ingals, E. F., and Friedberg, S. A., 90.

Jack, Frederick L., 140.
Jackson, Chevalier, 193.
Jackson, J. M., and Mead, L. G., 226.
Jacobi, A., 181.
Jacod, M., 179.
James, A., 127.
Johnston, Richard H., 77.
José, O., 32.

Digitized by Google

Klippel, M., and Lhermitte, J., 180.
Knopf, H. E., 478.
Kronig, G., 542.
Kuttner, L., 73.

Labbe, Marcel, 292.
Lamb, F. H., 141.
Lambert, Alexander, 171.
Lancereaux and Paulesco, 224, 415.
Langmead, F., 122.
Lavenson, R. S., 422.
Le Fevre, E., 294.
Leonard, T. M., 548.
Léopold-Lévi and de Rothschild, H., 228.
Lerch, Otto, 287.
Lhermitte, J., 180.
Longworthy, H. G., 126.
Lorand, A., 38.
Lowenburg, H., 72.

McCarrison, R., 674.
McClanahan, H. M., 40.
McInerny, J. J., 127.
McKernon, J. F., 223.
McNab, H. J., 123.
MacCallum, W. G., and Voegtlin, C., 289.
MacCoy, W. E., 137.
Mackenty, J. E., 193.
Maclellan, A., 487.
MacLeod, J. M. H., 353.
MacMurrough, F. K., 223.

Marine, D., and Williams, W. W., 549.
Marinesco, G., 613.
Mathewson, Geo. H., 132.
Mead, L. G., 235.
Medical Record, 412.
Meltzer, S. J., 485.
Ménard, 547.
Mergari, Oldo, 134.
Milligan, Wm., 180.
Mircoll, S., 421.
Mitchell, A. B., 417.
Mook, W. H., 612.
Moore, F. C., 43.
Moore, John L., 69.
Moritz, F., 545.
Morrison, B. G., 422.

Neer, C. S., 483.
Neuberg, W., 170.
Noehren, A. H., 129.
Norris, C. C., 480.
Novak, Emil, 227.

Oliver, J., 30.
Oppenheimer, K., 615.
Orbison, T. J., 420.
Ortner, N., 179.

Painter, C. F., 480.
Pardoe, John, 136.
Park, R., 479.
Parker, C. A., 142.
Paul, W. E., 70.
Paulesco, 224.
Peck, C. H., 39.
Pfahler, G. E., 43.
Porter, W. H., 350.
Pottenger, F. M., 194.
Potter, N. B., 41.
Power, D'Arcy, 486.
Price, G. H., 141.
Prout, W. T., 35.
Publisher's Announcement, 219.
Pynchon, E., 550.

Rattermann, F. L., 91.
Reese, F. de W., 93.
Reik, Henry O., 84.
Renner, L., 542.
Richards, A. F. B., 41.
Richards, George L., 343.
Richardson, M. W., 294, 676.
Riesman, D., 130.
Riesmeyer, L. T., 416.
Rivers, W. C., 85.
Robson, A. W. M., 183.
Rogers, L., 550.
Rose, 191.
Rosenthal, C., 222.
Rothschild, H. de, 228.
Rovsing, T., 128.
Ryall, C., 36.

Saar, 675.
Schalek, A., 357.
Schiff, E., 38, 196.
Schofield, A. T., 613.
Schrötter, Von, 289.
Schwenter, 351.
Seligman, H., 182.
Sendziak, J., 357.
Sergent and Ménard, 547.
Shively, H. L., 350.
Silvestri, T., 482.
Smith, E., 169, 420.
Smith, Joseph F., 418.
Smith, W. H., 287.
Smithies, Frank, and Walker, R. E., 194.
Solis-Cohen, S., 190.
Southworth, T. S., 189.
Spolverini, 227.
Stein, S. A., 544.
Stenzel, A., 170.
Stern, H., 81, 139.
Stevenson, H. B., 353.
Stimson, G. W., 75.
Stockton, C. G., 136.
Stone, A. K., 293.
Strauss, M., 191.
Strümpell, A. v., 130, 173.
Swift, H. M., 37.
Symonds, B., 614.

Taylor, Robert W., 174.
Thayer, W. S., and Fabyan, M., 70.
Theobald, Samuel, 140.
Thévenot, L., 481.
Thomas, T. T., 178.
Thrush, M. C., 70.
Tileston, W., 293.
Tracy, S. E., 226.
Tucker, H., 481.
Tuttle, J. P., 615.
Tyson, J., 86.

Vail, D. T., 221.
Vaquez, H., 292.
Vaughan, V. C., 677.
Vidal, 416.
Vincent, Beth, 610.
Vogt, W. H., 137.
Volhard, 223.
Von Schrötter, 289.

Wadsworth, Augustus, 76.
Walker, J. B., 135.
Walton, G. L., 32, 70, 90.
Walton, G. L., and Paul W. E., 70.
Watkins, F. A., 478.
Webster, R. W., 423.
Wertenbaker, Wm., 177.
West, S., 42.
Westenhoeffer, 132.
Whipple, E. G., 614.
White, E. Hamilton, 69.
White, W. H., 220.
Williams, J. T., 611.
Williams, L., 343.
Williams, O. T., 541.
Williams, W. W., 79, 549.
Wise, A. T. T., 355.
Witthauer, K., 611.
Wolkowitsch, N., 139.
Wood, E. J., 39.
Woodbury, Frank, 659.
Woodhull, Brig.-Gen. Alfred A., 75.
Woods, Hiram, 484.
Woodward, W. W., 196.
Worster, W. P., 480.
Wright, T., 548.
Wylie, Andrew, 82.
Wysokowicz, W. W., 88.

Zahorsky, J., 69.

Original Articles

The auto-protective resources of the body—A new foundation for scientific therapeutics. Charles E. de M. Sajous..... 201
The Bradshawe lecture. On the pleuræ: pleural effusion and its treatment. Sir James Barr 1
Buttermilk in infant-feeding. Joseph W. England 151
A case of nephro-ureterectomy for tuberculosis. Theo. A. Erck..... 156
Causes of mortality from heart disease in the United States. Thomas Darlington..... 649
The cutaneous manifestations observed in rheumatism in children. Jay F. Schamberg. 110
Dactylitis streptococci. James K. Young..... 343
The diagnosis and treatment of hæmorrhoidal disease. Collier F. Martin..... 591
The essence of the rest cure. J. Madison Taylor 275
A few hints from personal experience in psychotherapy inculcated by physiological analogies. Tom A. Williams..... 340
Foreign body in the iris. G. Oram Ring..... 601
Further observations on the uses of chromium sulphate in medicine. Louis Kolipinski 468
Further observations on the value of lactic acid as a remedy for certain conditions of the nasal passages. Alexander W. MacCoy 51
Gout; a disease of the metabolism: its treatment. Oliver T. Osborne..... 397
Graduated labor in pulmonary tuberculosis. Joseph Walsh 528
Laryngeal complications of typhoid fever. Joseph S. Gibb..... 531
The nature and treatment of fever. Woods Hutchinson 8
Neurasthenia — its etiology and treatment. Guthrie Rankin 97
Nostrum prescribing: Its cure. Joseph P. Remington 149
Present status of the opsonic theory and bacterial therapy. Nathaniel Gildersleeve.. 602
The prevalence of eye-strain in school children. Walter S. Cornell..... 114

Digitized by Google

Psychotherapy: Its scope and limitations. Charles K. Mills..... 329
Report of a case of intestinal obstruction. Lida Stewart-Cogill 536
The sick child. Thomas Morgan Rotch..... 521
Some aspects of alcoholism. Austin O'Malley. 596
Some commonly overlooked causes for stomach and bowel disturbance. Robt. T. Morris 393
Some remarks upon tubercular keratitis, with reports of case. William Campbell Posey 460
The subsequent history of a case of acquired cataract in childhood. Howard F. Hansell 49
Systemic infection through the tonsils. Rufus B. Scarlett 665
The therapeutics of cardio-vascular diseases. Frederick P. Henry..... 265
The treatment of chronic Bright's disease. Reynold Webb Wilcox..... 457
Treatment of tuberculosis of the lungs. Joseph Walsh 585
Tuberculosis in the insane. Frank Woodbury. 659
The United States Pharmacopœia—A therapeutic standard. Joseph P. Remington..... 402
The value of morphine derivatives in ocular therapeutics. L. Webster Fox..... 465
Wanted: A medical bureau of publicity, especially for county medical societies. J. Madison Taylor 52
Discussion: Dr. Henry Beates, Dr. John G. Clark, Dr. A. B. Hirsh, Dr. Jay F. Schamberg, Dr. Charles A. E. Codman, Dr. Taylor.

The Therapeutics of Diseases Which Involve the Internal Secretions

The applied therapeutics of thyroid preparations. Charles E. de M. Sajous.....119, 159
The Bier hyperæmia method—How to enhance its curative efficiency. Charles E. de M. Sajous 281, 345
Hyperæsthetic rhinitis (hay fever): Its pathogenesis and treatment. Charles E. de M. Sajous 407
Influenza: Its pathogenesis and treatment. Charles E. de M. Sajous..... 20
Measles: Its pathogenesis and treatment. Charles E. de M. Sajous..... 61
The medicinal treatment of tuberculosis as interpreted by Sajous. J. Madison Taylor 472
Mercury in the treatment of tuberculosis—Its mode of action—A warning. Charles E. de M. Sajous..... 537

Editorials

The annulment of the pure food and drug law in South Dakota. J. Madison Taylor.... 27
"Audi alteram partem." Beverley Robinson... 285
Bier's method in the treatment of some neuroses. Alfred Gordon..... 284
"Causes of mortality from heart disease in the United States." W. E. Robertson..... 670
Diagnosis of extra-uterine pregnancy. H. J. Boldt 165
Hæmorrhage from an ectopic pregnancy. Howard C. Taylor..... 168
The internal secretions in disease. C. E. de M. Sajous 29
Recent advances regarding hysteria in relation to traumatic neurosis. T. A. Williams. 608
Symptomatology and treatment of gonorrhœa. H. M. Christian..... 476
Thyroidectomy in dementia præcox. Henry J. Berkley 163
The treatment of intraperitoneal hæmorrhage from rupture or abortion of tubal pregnancy. Hiram N. Vineberg..... 166
The treatment of neurasthenia among the poor. Richard C. Cabot..... 125
The tuberculin and agglutination tests in the light of internal secretions. Charles E. de M. Sajous..... 672
Untrained men as anæsthetists. Collin Foulkrod 412

General Index

Abortion. J. Oliver..... 30
Acidity of the urine. F. A. Watkins..... 478
Addison's disease. W. H. White..... 220
Editorial comment 221
Adenoids and adenoid tuberculosis, pathology of. E. Hamilton White..... 69
And tonsils. H. G. Longworthy..... 126
In infancy. John L. Moore..... 69
Painless removal of. H. Gradle..... 31
Albuminurias. L. Williams..... 348
Alcohol, pathological changes produced by. Baumgarten 31
Tissue changes after injection of. P. v. Baumgarten 127
Alcoholism, some aspects of. Austin O'Malley 596
Alimentary intoxication in infants. J. Zahorsky 69
Alopecia areata, formaldehyde in. J. J. McInerny 127
Amyl nitrite in tuberculous hæmoptysis. A. Braga, 137; George A. Grace-Calcert... 413
Anæmia and leukæmia, reparative processes in. Medical Record 413
Tuberculous. A. James..... 127
Aneurism of the aorta, importance of early detection of. H. D. Arnold..... 221
Annulment of the pure food and drug law in South Dakota. J. Madison Taylor..... 27
Anterior poliomyelitis in the adult. G. L. Walton 33
Anthracite coal ash as a surgical dressing. W. Irving Clark, Jr..... 169
Antimony. E. Smith..... 169
Antithyreoidin in osteomalacia. R. Hoffmann. 421
Antrum of Highmore, an original method for opening intranasally. D. T. Vail..... 221
Aortic regurgitation. C. L. Greene..... 414
Apoplexy, treatment of. Goldscheider..... 127
Appendicitis, a new symptom of. T. Rovsing.. 128
And diseases in the female pelvis, confusion of. A. E. Benjamin..... 129
Etiology. M. C. Thrush, 70; O. T. Williams. 541
In children, acute. Beth Vincent..... 610
In infancy and childhood. W. Neuberg..... 170
Masked. A. T. Bristow..... 414
Prophylaxis of. K. Witthauer..... 611
Value of the differential leucocyte count in acute. A. H. Noehren..... 129
Applied therapeutics of thyroid preparations. Charles E. de M. Sajous.....119, 159
Arsenic, abuse of, in the treatment of diseases of the skin. J. F. Schamberg..... 414
Action of, on the red blood corpuscles. J. A. Gunn 541
In skin diseases. M. R. Hartzell..... 673
In treatment of syphilis. C. Rosenthal..... 222
Editorial comment 223
Local applications of, in septicæmia from wound infection. S. Cerny..... 142
Arteriosclerosis. G. L. Walton and W. E. Paul 70
Age in its relation to, and death from. W. H. Smith 287
Incipient, signs of. O. Josué..... 33

Digitized by Google

In relation to mental disease. C. Macfie Campbell 223
Its pathogenesis and treatment. Lancereaux. 415
Nervous manifestations of. A. Stenzel..... 170
Premonitory signs of. A. S. Gubb..... 541
Radical Artery and. W. S. Thayer and M. Fabyan 70
Arthritis, infectious, strain as a causative factor in. J. D. Adams..... 70
Artificial respiration by ventilation of the trachea. Volhard 222
Asphyxia neonatorum. I. L. Hill..... 84
Asthma and bronchitis, breathing exercises in cure of. H. E. Knopf..... 478
Bronchial, and its treatment. A. Strümpell. 130
Atheroma of the aorta, pulmonary tuberculosis and. E. Boinet..... 188
Atrophic rhinitis. C. A. Parker..... 142
Treatment of. George L. Richards..... 348
"Audi alteram partem." Beverley Robinson... 285
Auto-intoxication, neurasthenia of. T. J. Orbison 420
Auto-protective resources of the body—A new foundation for scientific therapeutics. Charles E. de M. Sajous..... 201
Bier hyperæmia method—How to enhance its curative efficiency. Charles E. de M. Sajous 281, 345
In the treatment of some neuroses. Alfred Gordon 284
Bismuth treatment of sinuses. E. G. Beck.... 170
Blackwater fever. W. T. Prout..... 35
Blood-pressure, effects of hydrastis on. W. W. Williams 79
Observations in eclampsia. G. S. C. Badger. 289
Pain and. H. Curschmann..... 183

Book Reviews:—

Abel's Laboratory Hand-book of Bacteriology. Translated by M. H. Gordon..... 146
American Pocket Medical Dictionary. Edited by W. A. Newman Dorland..... 94
Applied Physiology. Frederick A. Rhodes... 358
Auscultation and Percussion. Samuel Gee... 146
Cancer and Tuberculosis. Henry D. McCulloch 230
Cancer of the Womb. McCann..... 296
Chronic Constipation and Allied Conditions. J. Alexander McMillan..... 680
Clinical Lectures and Addresses on Surgery. C. B. Lockwood..... 679
Conferences on the Moral Philosophy of Medicine. Prepared by an American physician 46
Confessio Medici. By the writer of "The Young People" 551
Conservative Gynæcology and Electro-Therapeutics. G. Betton Massey..... 144
Diet in Health and Disease. Julius Friedenwald and John Ruhrah..... 144
Diseases of the Breast with Special Reference to Cancer. William L. Rodman..... 231
Diseases of Children: For Nurses. Robert S. McCombs 145
Diseases of the Ear. Hunter Tod..... 146
Diseases of the Eye. M. Stephen Mayon..... 678
Diseases of the Genito-Urinary Organs and the Kidney. Robert H. Greene..... 46
Diseases of the Heart. Von Jurgenson, Krehl, Von Schrötter, Dock..... 296
Diseases of the Intestines and Peritoneum. H. D. Rolleston..... 145
Diseases of the Larynx. Harold Barwell..... 146
Diseases of the Male Generative Organs. Edred M. Corner..... 146
Diseases of the Nose. Ernest B. Waggett.... 146
Diseases of the Stomach. I. Boas. Translated from the German by Albert Bernheim 93
Gynecology and Abdominal Surgery. Edited by Howard A. Kelly and Charles P. Noble 616
The Harvey Lectures..... 678
Heart Disease and Thoracic Aneurysm. F. J. Poynton 146
Hints on the Management of the Commoner Infections. R. W. Marsden..... 47
Human Anatomy. George A. Piersol..... 230
Hypnotic Therapeutics in Theory and Practice. John Quackenbos..... 359

Book Reviews (Continued):

Internal Secretions and the Principles of Medicine. Charles E. de M. Sajous..... 197
The Law in General Medical Practice. Stanley B. Atkinson..... 679
Life Insurance and General Practice. E. M. Brockbank 359
Manual of Venereal Diseases. Officers of the Royal Army Medical Corps..... 146
Maternity. Henry D. Fry..... 679
Modern Otology. John F. Barnhill and Ernest de W. Wales..... 358
The Mother's Year-Book. Marion Foster Washburne 552
Neurological and Mental Diagnosis. L. Pierce Clark and A. Ross Diefendorf..... 680
Obstetrics for Nurses. Joseph B. DeLee..... 144
Outlines of Psychiatry. William A. White... 231
Pain: Its Causation and Diagnostic Significance in Internal Disease. Rudolph Schmidt. Translated and edited by Karl M. Vogel and Hans Zinsser..... 551
The Pancreas: Its Surgery and Pathology. A. W. Mayo Robson..... 94
Pathological Technique. F. B. Mallory and J. H. Wright..... 678
The Physical Examination of Infants and Young Children. Theron Wendell Kilmer 47
Practical Anæsthetics. H. Edmund G. Boyle 146
Practical Points in Anæsthesia. Frederick-Emil Neef 680
The Prolongation of Life. Elie Metchnikoff. Translated by P. Chalmers Mitchell..... 678
Skin Affections of Childhood. H. G. Adamson 146
Standard Family Physician. Carl Reissig and Smith Ely Jelliffe..... 232
State Board Questions and Answers. Max Goepp 360
Surgery: Its Principles and Practice. Vol. III. W. W. Keen..... 360
Surgical Emergencies. Percy Sargent..... 146
Text-Book of Physiological Chemistry. Olof Hammersten 360
Text-Book of Physiology. William H. Howell 145
Text-Book of Physiology. Isaac Ott..... 197
Text-Book of Practical Gynecology. Gilliam. 296
Text-Book of the Practice of Medicine. James M. Anders 230
Therapeutics: Its Principles and Practice. H. C. Wood..... 616
Treatment of Disease in Children. G. A. Sutherland 146
A Treatise on Diseases of the Skin. Henry W. Stelwagon 45
Treatment of Fractures. Chas. L. Scudder.. 197

Bright's disease and its treatment. Otto Lerch 287
Chronic, treatment of. Reynold Webb Wilcox 457
Hæmorrhage in. D. Riesman..... 130
Bronchial asthma and its treatment. A. Strümpell 130
Catarrh, alkalies in the treatment of. A. Haig 348
Bronchitis and asthma, breathing exercises in cure of. H. E. Knopf..... 478
Burns, treatment of. L. Renner..... 542

Cancer, gastric. R. F. Chase..... 78
In an exophthalmic goiter. Clunet..... 349
Its etiology and treatment by trypsin. J. Alcindor 130
Laryngeal. N. Wolkowitsch..... 139
Of the rectum. J. P. Tuttle..... 615
Problem. R. Park..... 479
Recurrence. C. Ryall..... 36
Thymus treatment of. F. Gwyer..... 238
Treatment of. A. G. Henry..... 131
Uterine. R. B. Hall..... 423
Carcinoma. Victor Bonney..... 349
Of the body of the uterus, primary. C. N. Ballard 611
Of the corpus uteri, relation of, to fibroids. J. T. Williams 611
Of the rectum, treatment of. Joseph A. Blake 416
Cardiac complications of acute rheumatism. Alexander Lambert 171
Dilatation and infectious diseases. J. H. Blake 71

Digitized by Google

Cardio-vascular diseases, therapeutics of. Frederick P. Henry..... 265
Carpal scaphoid, fracture of the. William A. Downes 135
Cataract, acquired, in childhood, subsequent history of a case of. Howard F. Hansell 49
Causes of mortality from heart disease in the United States. Thomas Darlington, 649; W. E. Robertson..... 670
Cerebellar diagnostic symptom. A. Gordon.... 611
Cerebral abscess of otitic origin. J. F. McKernon 223
Cerebrospinal meningitis. E. Cautley..... 83
Epidemic, treatment with diphtheria antitoxin. W. H. Porter..... 350
Sore throat in epidemic. Westenhœffer..... 132
Chilblains, treatment of. F. Gardiner..... 171
Chloroform subcutaneously in neuralgia. S. Ormond Goldan 355
Chlorosis cured by thyroid extract. F. K. MacMurrough 223
Cholelithiasis, diagnosis of. H. B. Allyn..... 132
Cholesteatoma, infected, involving the labyrinth and accompanied by typical nystagmus. Geo. H. Mathewson..... 132
Chorea, pupillary signs in. F. Langmead..... 133
Chromium sulphate in medicine, further observations on the uses of. Louis Kolipinski 468
Cirrhosis of the liver, neuritis in the course of. M. Klippel and J. Lhermitte..... 180
Comatose pernicious malaria. C. S. Neer..... 483
Confusion of appendicitis and diseases in the female pelvis. A. E. Benjamin..... 129
Constipation, oil injections in. Vidal..... 416
Consumption, vascular striæ, a means of recognition of commencing. Francke..... 86
Convalescence. W. P. Worster..... 480
Convulsions in children. H. Lowenburg..... 72
Cretinism, endemic. R. McCarrison..... 674
Cutaneous manifestations observed in rheumatism in children. Jay F. Schamberg. 110
Cystitis. R. E. Davison..... 542

Dactylitis streptococci. James K. Young..... 343
Delirium and delirious states. H. M. Swift.... 37
Dementia præcox, thyroidectomy in. Henry J. Berkley 163
Dermatitis exfoliativa, quinin in. W. H. Mook 612
X-ray. A. C. Geyser..... 424
Diabetes, pathology of. H. J. McNab..... 133
Surgical operations in. L. T. Riesmeyer..... 416
Mellitus, association of tuberculosis of the lungs with. H. L. Shively..... 350
Epileptiform attacks in. L. A. Conner..... 288
Oatmeal diet in the treatment of. J. B. Herrick 172
Symptomatology and treatment of. F. E. Beal 134
Diarrhœa, chronic. S. G. Grant..... 543
Treatment. L. Kuttner..... 73
Diphtheria antitoxin, to enhance the efficiency of. G. Kronig..... 543
Treatment of epidemic cerebrospinal meningitis with. W. H. Porter..... 350
Primary nasal. G. W. Stimson..... 75
Duodenal ulcer. C. H. Peck..... 39
Diagnosis of. J. F. H. Broadbent..... 351
Diagnosis and treatment of. A. B. Mitchell.. 417
Dysentery, ipecacuanha in. Brig.-Gen. Alfred A. Woodhull 75
Dysmenorrhœa. C. C. Norris..... 480

Eclampsia, blood-pressure observations in. G. S. C. Badger..... 289
Treatment by tincture of iodine. Aldo Mergari 134
Ectopic gestation. S. E. Getty..... 87
Pregnancy, hæmorrhage from an. Howard C. Taylor 168
Eczema. Schwenter 351
Embolism consequent on lesions of the left heart. P. Claisse..... 172
Endarteritis, obliterating. C. F. Painter..... 480
Endemic cretinism. R. McCarrison..... 674
Endocarditis, chronic, management of, during stage of compensation. S. A. Stein..... 544
Malignant. Augustus Wadsworth..... 76
Enteroptosis, surgical phases of. J. G. Clark.. 351
Epilepsy, the nose in its relation to. W. S. Bryant 75
Epileptiform attacks in diabetes mellitus. L. A. Conner 288
Epithelioma and x-rays. E. Schiff..... 28
Etiology of. A. E. Hertsler..... 134
Erysipelas, magnesium sulphate solution in. H. Tucker 481
Erythema multiforme, relationship of lupus erythematosus and. J. Galloway and J. M. H. MacLeod..... 353
Essence of the rest cure. J. Madison Taylor.. 275
Eustachian tube, stricture of the. W. Sohier Bryant 228
Exophthalmic goiter. Von Schrötter..... 289
Editorial comment 289
And thyroidismus, blood conditions in. L. Caro 674
Cancer in. Clunet..... 349
Lecithin in. H. J. Berkley..... 612
Persistence of the thymus and. C. Hart..... 289
Pathology and treatment. A. G. Gullan..... 612
Quinine in treatment of. Lancereaux and Paulesco 224
Editorial comment 225
Treatment of. A. von Strümpell, 173; J. M. Jackson and L. G. Mead..... 225
Extra-uterine pregnancy, diagnosis of. H. J. Boldt 165
Eye-strain in school children, prevalence in. Walter S. Cornell..... 114

Fever, clinical observations on the origin of. A. Lorand 88
Nature and treatment of. Woods Hutchinson 8
Few hints from personal experience in psychotherapy inculcated by physiological analogies. Tom A. Williams..... 340
Fibromyomata uteri. S. E. Tracy..... 226
Formaldehyde in alopecia areata. J. J. McInerny 127
Fracture-dislocation of shoulder. J. M. Mason. 290
Fracture of the carpal scaphoid. William A. Downes 135
Of neck of femur, treatment. J. B. Walker. 135
Frontal sinus disease, personal experience with. Richard H. Johnston..... 77
Simple and safe operation on the, by the intranasal route. R. H. Good..... 77
Functional dyspepsia, rational treatment of. R. Hutchinson 418
Further observations on the uses of chromium sulphate in medicine. Louis Kolipinski 468
On the value of lactic acid as a remedy for certain conditions of the nasal passages. Alexander W. MacCoy..... 51

Gangrene in malaria. E. J. Wood..... 39
Gastric and duodenal ulcer. C. H. Peck..... 39
Cancer. R. F. Chase..... 78
Ulcer. W. F. Cheney..... 135
Treatment. C. G. Stockton..... 136
Goiter in the newborn. J. Fabre and L. Thévenot 481
Gonococcus in disease, rôle of the. Robert W. Taylor 174
Gonorrhœa, treatment of acute. John Pardoe. 136
Gout; A disease of the metabolism: Its treatment. Oliver T. Osborne..... 397
Hydrochloric acid in. Falkenstein..... 79
Pathogenesis. T. Silvestri..... 482
Graduated labor in pulmonary tuberculosis. Joseph Walsh 528

Hæmophilia, relation of suprarenal hæmorrhage in an infant to. B. G. Morrison. 422
Hæmoptysis, tuberculous, amyl nitrite in. A. Braga 137
Hæmorrhage in Bright's disease. D. Riesman. 130
Hæmorrhagic typhoid fever. W. W. Woodward 196
Hæmorrhoidal disease, diagnosis and treatment of. Collier F. Martin..... 591
Hand as a therapeutic agent. J. M. Taylor.... 175
Hay fever: Its pathogenesis and treatment. Charles E. de M. Sajous..... 407
Headache as a symptom of local disorders. F. Coggeshall and W. E. MacCoy..... 137
Heart disease in the United States, causes of mortality from. Thomas Darlington, 649; W. E. Robertson..... 670
In scarlet fever. I. H. Eddy..... 91
Work hypertrophy of the. Grober..... 352

Digitized by Google

Hodgkin's disease a type of sarcoma. W. B. Coley 353
Hydrastis, effects of, on blood-pressure. W. W. Williams 79
Hydrochloric acid in gout. Falkenstein..... 79
Hydronephrosis in children. T. H. Coffin..... 290
Hyperæsthetic rhinitis (hay fever): Its pathogenesis and treatment. Charles E. de M. Sajous 407
Hyperemesis gravidarum. W. H. Vogt..... 137
Hysteria. F. X. Dercum..... 39
And neurasthenia, psychology of. A. T. Schofield 613
Recent advances regarding, in relation to traumatic neurosis. T. A. Williams.... 608

Icterus neonatorum. A. Granet..... 80
Pathology of. A. Graves..... 138
Immunity and x-ray therapeutics. A. W. Crane 175
Indications for water in childhood. M. Barbour 176
Infant-feeding, buttermilk in. Joseph W. England 151
Lactacid milk in. C. E. Carter..... 226
Influenza: Its pathogenesis and treatment. Charles E. de M. Sajous..... 20
Of the nose, throat, and larynx. W. S. Bryant 80
Renal complications of. H. Stern..... 81
Weather instability and. H. S. Anders..... 139
Information desired concerning cancer..... 45
Insane, tuberculosis in the. Frank Woodbury. 659
Internal secretions in disease. C. E. de M. Sajous 29
Relations between testicles and other glands with. Barnabo 290
Tuberculin and agglutination tests in the light of. Charles E. de M. Sajous..... 672
Internes for City Hospital, New York..... 143
Intestinal colic, stomach and. F. L. Rattermann 91
Obstruction, report of a case of. Lida Stewart-Cogill 536
Intraperitoneal hæmorrhage from rupture or abortion of tubal pregnancy, treatment of. Hiram N. Vineberg..... 166
Iodine, relation of, to the structure of the thyroid gland. D. Marine and W. W. Williams 549
Iodoformic acid in phthisis. H. Stern..... 139
Ipecacuanha in dysentery. Brig-Gen. Alfred A. Woodhull 75
Iris, foreign body in the. G. Oram Ring..... 601
Iritis, rational treatment of. A. Brav..... 176

Keratitis in syphilis. A. E. Davis..... 482
Tubercular, some remarks upon. William Campbell Posey 460
Kidney-stone, diagnosis and treatment of. Arthur Dean Bevan and Joseph F. Smith. 418

Laceration of the cervix as a cause of postpartum hæmorrhage. Wm. Wertenbaker 177
Lactacid milk in infant-feeding. C. E. Carter. 226
Lactic acid as a remedy for certain conditions of the nasal passages, further observations on the value of. Alexander W. MacCoy 51
Laryngeal cancer. N. Wolkowitsch..... 139
Complications of typhoid fever. Joseph S. Gibb 531
Growths, treatment of, by the galvano-cautery. Andrew Wylie..... 82
Manifestations in locomotor ataxia and multiple sclerosis. Wolff Freudenthal..... 419
Tuberculosis. B. Robinson..... 482
Larynx in locomotor ataxia. W. B. G. Harland 83
Paralysis of the. W. H. Casselberry..... 546
Lecithin in exophthalmic goiter. H. J. Berkley 612
Leukæmia and anæmia, reparative processes in. Medical Record..... 413
Liver abscess, tropical. Bradshaw, 177; L. Rogers 550
Locomotor ataxia. E. A. Dent..... 82
And multiple sclerosis, laryngeal manifestations in. Wolff Freudenthal..... 419
Larynx in. W. B. G. Harland..... 83
Ludwig's angina. T. T. Thomas..... 178
Lupus erythematosus and erythema multiforme, the relationship of. J. Galloway and J. M. H. MacLeod..... 353

Magnesium sulphate solution in erysipelas. H. Tucker 481
Malaria, comatose pernicious. C. S. Neer..... 483
Gangrene in. E. J. Wood..... 39
Malignancy of warts and moles. E. A. Babler. 229
Malignant endocarditis. Augustus Wadsworth. 76
Tumors of the nasal fossæ. L. Harmer and E. Glastion 85
Trypsin in. W. P. Graves..... 178
Mastoiditis. Leartus Connor..... 290
Measles: Its pathogenesis and treatment. Charles E. de M. Sajous..... 61
And rubella. H. M. McClanahan..... 40
Treatment of. J. Hallé..... 291
Medical bureau of publicity, especially for county medical societies. J. Madison Taylor 52
"Medical Era's" gastro-intestinal edition..... 295
Medicinal treatment of tuberculosis as interpreted by Sajous. J. Madison Taylor... 472
Membranous croup, non-diphtheritic. M. Jacob 179
Rhinitis. Rose 191
Meningitis, cerebro-spinal. E. Cautley..... 83
Differentiation of. N. Ortner..... 179
Treatment of. V. Arnold..... 419
Mental disease, arterio-sclerosis in relation to. C. Macfie Campbell..... 233
Origin of neurasthenia and treatment. D. Drummond 86
Mercury in the treatment of tuberculosis—Its mode of action—A warning. Charles E. de M. Sajous..... 537
In tuberculosis. W. F. Bernart..... 419
Middle-ear suppuration. W. H. Harrison..... 84
Chronic, treatment of. Wm. Milligan..... 108
Conservative treatment. Samuel Theobald... 140
Indications for major operative treatment. Edward B. Dench..... 180
Ossiculectomy in chronic. Frederick L. Jack 140
Pathology of. Henry O. Reik..... 84
Turbinal, indications for resection of the. W. E. Casselberry..... 40
Migraine and the eyes. E. M. Alger..... 483
Mineral waters in the treatment of syphilis. C. de la Carrière..... 677
The Monthly Cyclopædia and Medical Bulletin. 219
Morphine derivatives in ocular therapeutics, value of. L. Webster Fox..... 465
Myasthenia. G. Marinesco..... 613
Myxœdema transmitted by goitrous wet-nurses. Spolverini 227
Editorial comment 227

Nasal abnormalities and tuberculosis. W. C. Rivers 85
Fossæ, malignant tumors of the. L. Harmer and E. Glastion 85
Nature and treatment of fever. Woods Hutchinson 8
Nephritis, treatment of. J. Tyson..... 86
Nephro-ureterectomy for tuberculosis. Theo. A. Erck 156
Nervous manifestations of arteriosclerosis. A. Stenzel 170
Neuralgia, chloroform subcutaneously in. S. Ormond Goldan 355
Neurasthenia among the poor, treatment of. Richard C. Cabot..... 125
And hysteria, psychology of. A. T. Schofield. 613
Its etiology and treatment. Guthrie Rankin. 97
Mental origin of, and treatment. D. Drummond 86
Of autointoxication. T. J. Orbison..... 420
Neuritis in the course of cirrhosis of the liver. M. Klippel and J. Lhermitte..... 180
Nitroglycerin in. H. B. Stevenson..... 354
New symptom of appendicitis. T. Rovsing.... 128
Nihilism and drugs. A. Jacobi..... 181
Nitrites, therapeutic action of. H. Vaquez..... 232
Nitroglycerin in neuritis. H. B. Stevenson.... 354
Non-diphtheritic membranous croup. M. Jacod 179
Normal serum, therapeutic uses of. E. C. Hart 182
Nose, in its relation to epilepsy. W. S. Bryant 75

Oatmeal diet in the treatment of diabetes mellitus. J. B. Herrick..... 172
Obesity, exclusive milk diet in. F. Moritz..... 545
Simple and complicated. Marcel Labbe..... 232
Treatment of. I. Boas..... 354
Ocular complications of pregnancy. Hiram Woods 484

Digitized by Google

Symptoms of nasal origin. O .A. Griffin..... 182
Oil in the treatment of ulcer and stenosis of the pylorus. W. Bloch..... 188
Injections in constipation. Vidal..... 416
Of turpentine, internal use of. Eustace Smith 420
Opsonic theory and bacterial therapy, present status of the. Nathaniel Gildersleeve.. 602
Opsonins in normal and pathologic sera. N. B. Potter 41
Ossiculectomy in chronic middle-ear suppuration. Frederick L. Jack..... 140
Osteomalacia and the suprarenals. M. L. Bossi 87, 677
Antithyreoidin in. R. Hoffmann..... 421
Othematoma, the operative treatment of. H. Seligman 182
Otitic phlebitis. W. W. Wyssokowicz..... 88
Otitis media and infectious diseases. E. P. Fowler 675
Treatment of. A. F. B. Richards..... 41
Otorrhœa, chronic, some complications of. H. H. B. Cunningham..... 545
Overweight and underweight. B. Symonds..... 614
Oxygen in medicine and surgery. W. S. Bainbridge 354

Pain and blood-pressure. H. Curschmann..... 183
In pelvic disease, significance of. Emil Novak 227
Injection of air for the relief of. A. S. Gubb. 42
Pancreatic catarrh. A. W. M. Robson..... 183
Paralysis of the larynx. W. E. Casselberry... 546
Parathyroid glands, functional relationship of the thyroid to the. D. Forsyth..... 292
Passive hyperæmia. B. M. Bernheim..... 184
Pericarditis. S. West..... 42
Peritonitis, tuberculous. A. K. Stone..... 293
Philadelphia Medical Schools and the United States Pharmacopœia 143
Phosphaturia and the treatment of disease by conversion. R. Harrison..... 185
Phthisis, iodoformic acid in. H. Stern 139
Placenta prævia. I. L. Hill..... 89
Plastic operations for the closure of septal perforations. Burton Haseltine..... 191
Pleural effusion and its treatment. Sir James Barr 1
Pleurisy, relation of, to pulmonary tuberculosis. H. S. Goodall..... 546
With effusion, sudden death in, due to change of position. W. J. Calvert..... 186
Pneumonia in children. F. H. Lamb..... 141
In infancy, diagnosis of. R. G. Freeman.... 484
Tetanus neonatorum, complicated by. R. O. Clock 143
Poliomyelitis, acute, in the adult. G. L. Walton 90
Post-partum hæmorrhage. J. H. E. Brock.... 187
Laceration of the cervix as a cause of. Wm. Westenbaker 177
Postural treatment of pulmonary tuberculosis. A. T. T. Wise..... 355
Pregnancy, ocular complications of. Hiram Woods 484
Prevalence of eye-strain in school children. Walter S. Cornell..... 114
Primary nasal diphtheria. G. W. Stimson..... 75
Prostatic hypertrophy in aged. C. E. Bowers. 421
Psoriasis, vegetarian diet in. L. D. Bulkley... 227
Psychotherapy, a few hints from personal experience in, inculcated by physiological analogies. Tom A. Williams..... 340
Its scope and limitations. Charles K. Mills.. 329
Pulmonary hyperæmia, passive, and tuberculosis. W. Tileston..... 293
Tuberculosis, amyl nitrite in the hæmoptysis of. George A. Grace-Calvert..... 413
And atheroma of the aorta. E. Boinet..... 188
Graduated labor in. Joseph Walsh..... 528
Postural treatment of. A. T. T. Wise..... 355
Relation of pleurisy to. H. S. Goodall..... 546
Relative and absolute signs of. E. G. Whipple 614
Pupillary signs in chorea. F. Langmead..... 133
Purulent ophthalmia. G. H. Price..... 141
Pyelitis, infection in. Bond..... 188
Pylorus, ulcer and stenosis of the, oil in the treatment of. W. Bloch..... 188
Pyocyanase in throat affections. Saar..... 675

Quinine, accidents following injections of. R. de Gaulejac 356
In dermatitis exfoliatica. W. H. Mook..... 612
In the treatment of exophthalmic goiter. Lancereaux and Paulesco..... 224
Pyretic phase in action of. S. Mircoli..... 421

Rachitis. T. S. Southworth..... 189
Rational treatment of splanchnoptosis. J. Madison Taylor 676
Rectal feeding. F. C. Moore..... 43
Rectum, cancer of the. J. P. Tuttle..... 615
Red blood corpuscles, action of arsenic on. J. A. Gunn 541
Renal complications of influenza. H. Stern.... 81
Report of a case of intestinal obstruction. Lida Stewart-Cogill 536
Rest cure, essence of the. J. Madison Taylor. 275
Rheumatic fever, acute. S. Solis-Cohen..... 190
Rheumatism, acute, cardiac complications of. Alexander Lambert 171
Chronic: Thyroid treatment. Léopold-Lévi and H. de Rothschild..... 228
Editorial comment 228
In children, cutaneous manifestations observed in. Jay F. Schamberg..... 110
Rheumatoid deformans and thyroid insufficiency. Sergent and Ménard..... 547
Rhinitis, atrophic. C. A. Parker..... 142
Hyperæsthetic (hay fever): Its pathogenesis and treatment. Charles E. de M. Sajous 407
Hypertrophic and intumescent, the treatment of with the galvanocautery. E. F. Ingals and S. A. Friedberg..... 90
Membranous. Rose 191
Rickets, etiology of. L. Findlay..... 484
Röntgen ray diagnosis of urinary calculi. E. W. Caldwell 93
In sarcoma. G. E. Pfahler..... 43
Rubella, measles and. H. M. McClanahan..... 40

Salt solution, use and abuse of. E. A. Balloch 356
Samuel D. Gross prize—Fifteen hundred dollars 424
Sarcoma, Röntgen rays in. G. E. Pfahler..... 43
Scarlet fever, the heart in. I. H. Eddy..... 91
Treatment of. K. Oppenheimer..... 615
Self-repair, therapeutics of. S. J. Meltzer..... 485
Septal perforations, plastic operations for the closure of. Burton Haseltine..... 191
Septicæmia from wound infection, local applications of arsenic in. S. Cerny..... 142
Serum and vaccine therapy. M. W. Richardson 676
Diagnosis of syphilis. W. J. Butler..... 549
Sick child. Thomas Morgan Rotch..... 521
Sinuses, bismuth treatment of. E. G. Beck.... 170
Skin diseases, arsenic in. M. B. Hartzell..... 673
Society for coping with the emergencies of peace and war..... 295
Some commonly overlooked causes for stomach and bowel disturbance. Robt. T. Morris 393
Remarks upon tubercular keratitis, with reports of case. Wm. Campbell Posey.... 460
Sore throat in epidemic cerebro-spinal meningitis. Westenhœffer 132
Specific treatment of typhoid fever. V. C. Vaughan 677
Spinal anæsthesia, present status of. M. Strauss 191
Splanchnoptosis, rational treatment of. J. Madison Taylor 676
Spondylitis deformans. Theodore Diller and George J. Wright..... 356
Stomach and bowel disturbance, some commonly overlooked causes for. Robert T. Morris 393
And intestinal colic. F. L. Rattermann..... 91
Strain as a causative factor in infectious arthritis. J. D. Adams..... 70
Stricture of the eustachian tube. W. Sohier Bryant 228
Subsequent history of a case of acquired cataract in childhood. Howard F. Hansell.. 49
Suppuration of the middle-ear, management of. W. Sohier Bryant..... 356
Suppurative processes, artificial hyperæmia in. J. H. Beaty..... 192
Suprarenal glands and osteomalacia. L. M. Bossi 677
Hæmorrhage in an infant: Its relation to hæmophilia. B. G. Morrison..... 422

Digitized by Google

Insufficiency. R. S. Lavenson..... 422
Osteomalacia and. M. L. M. Bossi..... 87
Transplantation. F. C. Busch, T. M. Leonard and T. Wright..... 548
Symptomatology and treatment of gonorrhœa. H. M. Christian..... 476
Syphilis, arsenic in treatment of. C. Rosenthal 222
Keratitis in. A. E. Davis..... 482
Mineral waters in the treatment of. C. de la Carrière 677
Practical value of modern conceptions of. A. Schalek 357
Serum diagnosis of. W. J. Butler.....192, 549
Surgical treatment of. D'Arcy Power..... 486
Systemic infection through the tonsils. Rufus B. Scarlett 665

Tabes dorsalis, pathogenesis of. T. A. Williams 486
Tachycardia, paroxysmal. R. Bálint and K. Engel 486
Tapeworm, treatment of. F. de H. Hall..... 549
Tetanus neonatorum complicated by pneumonia. R. O. Clock..... 143
Tetany, relation of the parathyroids to calcium metabolism and the nature of. W. G. MacCallum and C. Voegtlin..... 229
Therapeutics of cardio-vascular diseases. Frederick P. Henry..... 265
Thrombosis, etiology and treatment of. H. A. Duncan and G. M. Illman..... 192
Thymus gland, function of. A. MacClennan... 487
Persistence of, and exophthalmic goiter. C. Hart 289
Treatment of cancer. F. Gwyer..... 288
Thyroid extract, chlorosis cured by. F. K. MacMurrough 223
Functional relationship of, to the parathyroid glands. D. Forsyth..... 392
Gland, relation of iodine to the structure of the. D. Marine and W. W. Williams... 549
Insufficiency, rheumatoid deformans and. Sergent and Ménard..... 547
Preparations, applied therapeutics of. Charles E. de M. Sajous..... 119
Treatment of chronic rheumatism. Léopold-Lévi and H. de Rothschild..... 228
Tic douloureux, treatment of. D'Orsay Hecht. 92
Tincture of iodine in the treatment of eclampsia. Aldo Mergari..... 134
Tissue changes after injection of alcohol. P. v. Baumgarten 127
Tonsillar hæmorrhage and its surgical treatment. Chevalier Jackson..... 193
Infection, remote effects of. P. K. Brown.... 43
Tonsillectomy in children under general anæsthesia. Ed. Pynchon..... 550
Tonsils, systemic infection through the. Rufus B. Scarlett 665
Toxæmia from the standpoint of perverted metabolism. R. W. Webster..... 423
Trachoma, treatment of. W. M. Carhart..... 423
Training of students in medical organizations.. 45
Traumatic neurosis, recent advances regarding hysteria in relation to. T. A. Williams. 608
Treatment of apoplexy. Goldscheider..... 127
Of cancer. A. G. Henry..... 131
Of chronic Bright's disease. Reynold Webb Wilcox 457
Of neurasthenia among the poor. Richard C. Cabot 125
Trichinosis of the upper respiratory passages. J. E. Mackenty..... 193
Tropical liver abscess. Bradshaw, 177; L. Rogers 550
Trypsin in malignant tumors. W. P. Graves.. 178
In the treatment of malignant tumors. W. P. Graves 196
Treatment of cancer, and its etiology. J. Alcindor 130
Tubal pregnancy, treatment of intraperitoneal hæmorrhage from rupture or abortion of. Hiram N. Vineberg..... 166
Tubercular ketatitis, some remarks upon. William Campbell Posey..... 460
Tuberculin and agglutination tests in the light of internal secretions. Charles E. de M. Sajous 672
Calmette's ophthalmic reaction to. Frank Smithies and R. E. Walker..... 194
Tuberculosis. F. M. Pottenger..... 194
As interpreted by Sajous, medical treatment of. J. Madison Taylor..... 472
Diagnosis of, by cutaneous tuberculin vaccination. W. J. Butler..... 195
In the insane. Frank Woodbury..... 659
Laryngeal. R. Robinson..... 482
Mercury in. W. F. Bernart..... 419
In the treatment of—Its mode of action—A warning. Charles E. de M. Sajous..... 537
Nasal abnormalities and. W. C. Rivers..... 85
Nephro-ureterectomy for. Theo. A. Erck..... 156
Of the lungs, association of diabetes mellitus with. H. L. Shively..... 350
Treatment of. Joseph Walsh..... 585
Of the upper air passages, potassium iodid and mercury in. K. Grunberg..... 195
Passive pulmonary hyperæmia and. W. Tileston 293
Tuberculous anæmia. A. James..... 127
Lymph nodes. D. N. Eisendrath..... 44
Peritonitis. A. K. Stone..... 293
Tumors: Treatment. E. Schiff..... 196
Trypsin in the treatment of malignant. W. P. Graves 196
Typhoid fever. R. M. Harbin..... 488
Hæmorrhagic. W. W. Woodward..... 196
Laryngeal complications of. Joseph S. Gibb. 531
Nature of. M. W. Richardson..... 294
Specific treatment of. V. C. Vaughan..... 677

United States Pharmacopœia—A therapeutic standard. Joseph P. Remington..... 402
Untrained men as anæsthetists. Collin Foulkrod 412
Upper air passages, disturbances in, connected with affections of the urogenital apparatus. J. Sendziak..... 357
Urinary calculi, Röntgen ray diagnosis of. E. W. Caldwell 93
Uterine cancer. R. B. Hall..... 423
Fibroids. F. de W. Reese..... 93

Vaccine therapy. M. W. Richardson..... 676
Value of morphine derivatives in ocular therapeutics. L. Webster Fox..... 465
Of the differential leucocyte count in acute appendicitis. A. H. Noehren..... 129
Vasoconstriction and dilatation, therapeutics of. E. Le Fevre..... 294
Vegetarian diet in psoriasis. L. D. Bulkley.... 227

Wanted: A medical bureau of publicity, especially for county medical societies. J. Madison Taylor 52
Warts and moles, malignancy of. E. A. Babler 229
Water in childhood, indications for. M. Barbour 176
Weather instability and influenza. H. S. Anders 139

X-ray in dermatology and x-ray dermatitis. A. C. Geyser..... 424
Therapeutics and immunity. A. W. Crane... 175

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INDEX

MEDICAL BULLETIN SECTION

List of Contributors

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General Index

Abstracts

Acute tonsillitis 58
Unilateral ascending paralysis..... 13
A depilatory to be used before surgical operation 131
A new diagnostic method in appendicitis..... 9
An interesting case of gaseous embolism..... 95
Appendicectomy 93
Atropine in ileus..... 19
A typhoid epidemic from milk..... 129

Caisson disease 11
Cancer of the breast..... 136
Of the Ovary..... 136
Carcinomatosis of meninges..... 131
Clinical view of gastric ulcer..... 50
Convulsions in children..... 14
Cystocele 51

Danger of pregnancy following operation for carcinoma of stomach..... 135
Dust and the human organism..... 134
Dyspareunia 94

Epithelioma of the penis..... 135
Eserin: Its action..... 20
Salicylate as a prophylactic against atony of the bowels 20
Essential insufficiency of the heart in childhood 52
Etiology of appendicitis..... 51
Exploratory laparotomy in gastric diseases..... 98

For eczema of hands..... 98
Formaldehyde-lime disinfection 20
For otorrhœa 50
Fungus poisoning 21

Genital tuberculosis 134
Glycuronic acid in conditions of diminished oxidation 57
Gonorrhœal sterility 95
Grocco's sign in pleural effusions..... 17

Hay fever treated by way of the antrum of Highmore 49
Hysteria 15

Indicanuria in rabbits..... 54
Iodofan 21

Liton bread in diabetes..... 22
Long-continued fevers 56

Marmorek's serum in tuberculosis..... 23
Mercuric bromide in the treatment of syphilis. 24
Mercurial injections in diabetes insipidus..... 23

Nasal neurasthenia 50

Opsonins 54
And vaccines in surgical treatment..... 24
In normal and pathologic sera..... 11

Paraffine poisoning 24
Pathological diagnosis of diseases of the liver and spleen during life..... 93
Phynophyma and its operative treatment..... 49
Physical examination of school children..... 13
Post-partum perinephritic abscess..... 130
Present-day ideas about tuberculosis..... 132
Prophylaxis in epidemic cerebro-spinal meningitis 14
Puerperal insanity 135
Radium in cancer and lupus..... 25
In treatment of nævi..... 25
Its action on plants and animals..... 25

Digitized by Google

Serum treatment of meningitis..... 26
State Board of Health problems..... 57
Sterility and sterilization..... 18
Stokes-Adams disease 13
Subacute perforation of the stomach..... 133
Sulphuric acid test for albumin..... 26
Suprarenal poisoning 26
Surgical application of blood examination..... 56
Treatment of hallux valgus with bunion..... 135
Syphilis in children..... 96

The choice of a vasodilator..... 129
Ductless glands and metabolism..... 96
Etiology of tuberculosis..... 134
Nature of myelin..... 55
Operative treatment of epilepsy..... 130
Therapeutics of cholelithiasis..... 53
The sigmoidal factor in constipation..... 51
Time of leaving bed after normal labor..... 54
Treatment of tuberculous abscesses..... 96
Toothache remedy 98
Toxic peripheral neuritis due to gastric retention 9
Treatment of arteriosclerosis..... 16
Of deafness by thiosinamine..... 16
Of fractured patella..... 94
Of infective disease..... 10
Of pruritus ani..... 131
Of renal calculi..... 58

Upper respiratory obstruction and oral deformity 97
Urinary infection in children..... 52

Addresses

Address to the graduating class of the Medico-Chirurgical College. L. Webster Fox... 361
An address delivered before the graduating class of the Training School for Nurses of the State Hospital for the Insane, at Warren, Pa. Frank Woodbury..... 617

Introductory address to the Departments of Medicine, Dentistry, Pharmacy, and Pharmaceutic Chemistry of the Medico-Chirurgical College of Philadelphia. L. Webster Fox 553

Book Reviews

A Manual of Clinical Diagnosis. James Campbell Todd 647
A Manual of Diagnosis and Treatment of the Diseases of the Eye. Jackson, A.M., M.D. 158
A Manual of Normal Histology and Organography. Charles Hill, Ph.D., M.D..... 157
A Manual of Pathology. Guthrie McConnell, M.D. 157
A Manual of the Diseases of the Nose, Throat, and Ear. E. B. Gleason, M.D., LL.D.. 37
Annual Reports of the Gettysburg Military Park Commission to the Secretary of War, 1893-1904 118
Annual Report of the Pennsylvania State College, 1905-1906 157
Annual Report of the Pennsylvania State College, 1906-07 712
A Text-Book of Diseases of the Nose and Throat. D. Braden Kyle, A.M., M.D... 77
A Text-Book of Diseases of Women. Charles B. Penrose 648
A Text-Book of Materia Medica, Pharmacology and Therapeutics. George F. Butler.... 646
A Text-Book of Pathology. Alfred Stengel..... 77
A Text-Book of Practical Gynæcology. D. Tod Gilman 36
A Text-Book of the Practice of Medicine. J. M. Anders, M.D., Ph.D., LL.D..... 75
Atlas and Text-Book of Human Anatomy, Vol. II. Prof. J. Sobotta..... 38
Atlas and Text-Book of Human Anatomy, Vol. III. Prof. J. Sobotta..... 74

Bier's Hyperemic Treatment in Surgery, Etc. Meyer 326

Compend of Surgery. Orville Horwitz..... 78

Department of Commerce and Labor, Bureau of the Census..... 712
Diagnostics of Diseases of Children. Le Grand Kerr 35
Diseases of Children. William Nelson Mundy.. 647
Diseases of the Breast, with Special Reference to Cancer. Wm. L. Rodman, M.D., LL.D. 118
Diseases of the Heart. Prof. Th. Von Jurgensen, L. Krehl and L. Von Schrötter..... 263
Diseases of the Heart and Aorta. Satterthwaite 326
Diseases of the Genito-Urinary Organs and the Kidney. Robt. H. Greene..... 36
Diseases of the Skin and the Eruptive Fevers. Jay Frank Schamberg..... 584

Essentials of Dietetics in Health and Disease. Amy Elizabeth Pope..... 583

Fourth Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. Edited by Joseph Walsh 648

General Medicine. Billings and Salisbury..... 328
General Surgery of the Practical Medicine Series. Head 392
Gynæcology and Abdominal Surgery. Howard A. Kelley 38

Index Catalogue to the Library of the Surgeon-General's Office, U. S. Army..... 712
Insomnia and Nerve Strain. Henry S. Upson.. 456
International Clinics 327
International Clinics 117

Manual of the Diseases of the Eye. Chas. H. May 75
Medical Gynecology. Samuel Wyllis Bandler.. 520
Merk's 1907 Index..... 117

Obstetrics for Nurses. Joseph B. DeLee..... 648

Pharmacology: The Action and Uses of Drugs. Maurice Vejux Tyrode..... 584
Pharmacology; The Action and Uses of Drugs. Maurice Vejux 456
Points of Practice in Maladies of the Heart. James Sawyer 584
Practical Fever Nursing. Ed. C. Register..... 78
Practical Lessons in Nursing: Fever Nursing. J. C. Wilson, A.M., M.D..... 158

Report of the Commissioner of Education..... 118
Report on the Origin and Prevalence of Typhoid Fever in the District of Columbia. M. J. Rosenau, L. L. Lumsden, J. H. Kastle 117

Squibb's Materia Medica..... 79
Subcutaneous Hydrocarbon Protheses. F. Strange Kolle 456
Surgery: Its Principles and Practice, Vol. II. Edited by W. W. Keen..... 37
Surgery: Its Principles and Practice, Vol. III. Edited by W. W. Keen..... 264
Surgical Diagnosis. Daniel N. Eisendrath, M.D. 76
Surgical Therapeutics. Emory Lanphear, M.D., Ph.D., LL.D. 264
Syphilis. Ed. L. Keyes, Jr..... 156

Text-Book of Ophthalmology. Ernst Fuchs.... 455
The Correction of Featural Imperfections. Charles C. Miller, M.D..... 79
The Cure of Rupture by Paraffin Injections. Charles C. Miller..... 647
The Development of Ophthalmology in America, 1800 to 1870. Hubbell..... 328
The Elements of the Science of Nutrition. Graham Lusk, Ph.D., M.A., F.R.S. (Edin.) 263
The Good Neighbor in the Modern City. Richmond 326
The Nervous Afflictions of the Heart. Gibson. 326
The Pancreas: Its Surgery and Pathology. A. W. Mayo Robson..... 35
The Perpetual Visiting and Pocket Reference Book 39
The Physicians' Visiting List for 1908..... 39
The Practical Medicine Series. Edited by Gustavus P. Head, Vol. X..... 117

Digitized by Google

The Practitioner's Visiting List for 1908..... 38
The Principles and Practice of Modern Otology. John F. Barnhill, M.D..... 76
The Treatment of Diseases. Wilcox..... 326
The Treatment of Fractures: With Notes Upon a Few Common Dislocations. Chas L. Scudder, M.D. 78
The Wonder Book of Magnetism. Edwin J. Houston 712
Third Annual Report of the Henry Phipps Institute. Edited by J. Walsh..... 118
Thirty-fourth Annual Report of the Secretary of the State Board of Health of the State of Michigan 118
Transactions of the Thirty-third Annual Meeting of the Mississippi Valley Medical Association 712
Transactions of the Fifth Annual Conference of State and Territorial Health Officers. 157
Treatment of Diseases of Children. Charles Gilmore Kerley, M.D..... 35

Visiting and Pocket Reference Book (Perpetual) 158

Wellcome's Excerpta Therapeutica..... 79

Clinical Lectures

Acne rosacea and psoriasis. John V. Shoemaker 621
Acute ecthyma. John V. Shoemaker..... 425

Case of acromegaly. John V. Shoemaker, M.D., LL.D. 81
Chronic interstitial nephritis. John V. Shoemaker 297

Epithelioma—Herpes zoster ophthalmicus. John V. Shoemaker 559
Erythematous eczema. John V. Shoemaker, M.D., LL.D. 41

Paræsthesia. John V. Shoemaker, M.D., LL.D. 121
Parenchymatous nephritis and multiple verruca (warts). J. V. Shoemaker..... 681
Pityriasis rubra. John V. Shoemaker, M.D., LL.D. 1

Scabies. John V. Shoemaker..... 367

The open method of treating Thiersch's grafts. Ernest Laplace, M.D., LL.D..... 83
Tinea favus pilaris. John V. Shoemaker..... 489

Consultation Department

Acne 29, 119

Catarrhal jaundice 69
Crusta lactea 148

Diphtheritic paralysis 28

Eczema labiorum 108

Feeding in tuberculosis 68
Furunculosis 147

Leukoplakia 28

Neurasthenia and gout..... 109

Prostatitis 148

Tinea circinata 147

Editorial

A brief epidemic of plague in the laboratory at Cronstadt 27

Child labor 698
Compulsory notification of tuberculosis..... 146
Copper poisoning 379
Counter prescribing 67

Digitalis 509
Dispensing poisons 313

Ether inhalation in pulmonary tuberculosis.... 27
Etiology of pulmonary tuberculosis..... 445

Hygiene in Prussian schools..... 107

Impure milk 145
Indiscriminate kissing 636
Misbranding of breakfast foods..... 67

Public health and marine-hospital service..... 446

Scientific institutions, medical colleges and hospitals 246
Speed and the racial decline..... 571

The breeding of flies..... 312
Dust and dirt of large cities..... 247
Future of the "Medical Bulletin"..... 145
Pharmacopœia 107

Vacation 380

Materia Medica and Therapeutics

Acetone in inoperable carcinoma..... 248
Acidum sulphuricum dilutum in the treatment of carbuncles, boils, etc. R. J. and J. Reynolds 573
Aconite and belladonna: Their antagonistic action. H. Speirs..... 573
Acute abscesses: A method of obtaining rapid healing. J. Phillips..... 381
Adrenalin and pituitary extract..... 700
Treatment of infective diseases. Hodick..... 638
Air insufflation in the treatment of pleural effusions. Archard 638
Alcoholic injections for facial neuralgia. Sicard 381
Alcohol in peritonitis..... 59
Almatein in ulcers and wounds. Venus..... 447
Alum in ivy poisoning. Charles W. Reynolds. 314
Alypin as a local anæsthetic. Soriat. Grazzi... 511
Amblyopia in children. Stephenson..... 574
Amyl nitrite in tuberculous hæmoptosis..... 127
Anæsthesia, nitrous oxide..... 700
Anaphylaxis. D. H. Bergey..... 574
Antidysenteric vaccines by mouth. M. Dopter. 382
Antiformin as a disinfectant. Uhlenhuth and Xylander 638
Antimeningococcic serum. S. Flexner and J. W. Jobling 512
Antimeningococcus serum. L. W. Ladd..... 639
Antiseptic vapors in treatment of pulmonary phthisis 701
Antithyroidin in Basedow's disease..... 701
In the treatment of Basedow's disease. S. Bauman 639
Antituberculous serum in the treatment of tuberculosis. Jacobson 640
Apomorphine hydrochloride: Its therapeutic value 127
Argenti nitratis 59
Arhovin in gonorrhœa..... 59
Arsenic in syphilis..... 138
Its danger in chorea..... 249
Its method of administration in chorea..... 249
Arsen-triferrol: A new iron and arsenic preparation. E. Salkowski..... 314
Artificial hyperæmia in acute wounds of the extremities 138
Atropine methylbromide in infantile eclampsia 701
And strychnine in the treatment of morphine habit 19
Sulphate, applied locally in coryza..... 60
Arylarsonates in the treatment of syphilis. Lambkin 575

Balsam of Peru in the treatment of wounds. Gebele 640
Of Peru: Its value as a surgical dressing.... 138
Bananas in the treatment of tropical diarrhœa. 60
Belladonna poisoning from linimentum belladonna 314
Bile, test for. W. H. Bulig..... 382
Bismuth-vaselin injections in the treatment of chronic sinuses 701
Subnitrate in affections of the stomach..... 61
Treatment of sinuses..... 259
Blood-culture diagnosis in typhoid fever. Maybee and Taft..... 447
Bromine vapor in whooping-cough. W. R. Schottin 314

Digitized by Google

Caffeine. J. M. French..... 383
Calcium chloride in aortic aneurism. Ambrose. 640
In melæna neonatorum. S. C. Legge..... 383
Calcium: Its antagonistic action on the effects of magnesium. Meltzer and Auer..... 315
Calmette's tuberculin test in 210 asylum patients. James P. Sturrock..... 315
Cannalin tannate (Merk)..... 702
Capsicum: Its value..... 99
Carbonic and lactic acid formed during muscular contractions and rigor mortis..... 251
Cardio-vascular prognosis 702
Castor oil in appendicitis. E. Sonnenburg..... 448
Caulophyllum: Its true action. Eli G. Jones.. 449
Cephaldol 251
Chinosol 61, 139
Chloral hydrate administered by rectum..... 253
Chloroform in obstetrics. W. J. Sinclair..... 512
Anæsthesia 702
Versus ether. Abbe..... 384
Cocaine. J. M. French..... 384
Cold packs in infantile pneumonia..... 63
Copper in intestinal diseases..... 99
Crude tar in membranous colitis. David Wark. 640
Cyanide of mercury with borax in surgical practice 253

Diet in the treatment of diabetes. Kolisch.... 640
In typhoid fever. R. M. Harris..... 513
Diphtheria antitoxin in the treatment of pseudomembranous non-diphtheritic conjunctivitis 253
Douching in hepatic diseases..... 253

Effect of cold on neoplasms. De Keating Hart 641
Ergot, potassium iodide, and sodium salicylate, their effects upon the ear. G. B. McAuliffe 316
Valuable in many cases other than obstetrical. Robinson 513
Erysipelas: Three diagnostic signs. Millan... 575
Essence of cinnamon in influenza. Ross..... 316
Euphorbia: Its value in asthma and bronchial-catarrh. M. Artault..... 641
Exercise and opsonic index in pulmonary tuberculosis 254

Festoform and firmobor..... 62
Fibrolysin: Its installation into the conjunctival sac. Windmüller 316
Formaldehyde derivatives. T. Sollmann..... 576
Fumes counteracted 99
For odorous feet..... 254

Gamboge 449
Gelatin enemas in hæmorrhages from typhoid ulcers 703
And salt solution infusions in typhoid hæmorrhage. Witthauer 576
Enemas in hæmorrhages from typhoid fever. E. Michaelis 514
Glycerin and urea in gouty diathesis. G. Rosenfield 450
Gonococcus injection in gonococcal infections. E. E. Irons..... 514
Gonorrhœa vaccine 641

Hexamethylenamin: Its excretion in the bile and pancreatic juice. S. W. Crow..... 317
Hexamethylentetramine and its salts..... 254
High altitude in the treatment of Basedow's disease. Stiller 317
Frequency currents in constipation. Fleig and Frenkel 317
Frequency in malignant tumors..... 140
Homogeneous rays in the treatment of carcinoma. F. Dessauer and Max Krüger. 514
Hydrargyri cum creta in the treatment of small-pox. V. B. Nesfield..... 318
Hydrastine 577
Hydrochloric acid treatment in gout..... 141
Hydrogen peroxide in puerperal sepsis. V. T. Carruthers 385
Hydrotherapeutic action. Curran Pope..... 450
Hydrotherapy in scarlatina..... 641
Hyperæmia. J. F. Binnie..... 451

Ice in pyrexial diseases..... 703
Icthyol baths in skin diseases..... 63
Indican reaction. Houghton..... 385
Infant-feeding standards 703
Iodo-formic acid in phthisis..... 100
Iodine injections in tuberculosis of the testes. Finoccinaro 515
In peritoneal surgery..... 642
(Tincture) in puerperal fever..... 256

Keratin in tabes and hepatic cirrhosis..... 100

Lactic acid bacilli cultures in nose, throat, and ear work. H. Holbrook Curtis..... 577
Acid ferments in tropical diseases..... 256

Magnesium plates in the fixation of wandering kidney 704
Salts in epilepsy..... 100
Sulphate for endometritis. C. J. Wallace.... 318
Marmorek's serum in surgical tuberculosis.... 256
Mercurial application followed by rise of temperature 63
Metchnikoff's serum in erysipelas. Tyrrell.... 516
Methylene-blue for cracked nipples..... 319
Milk, free, diet in typhoid fever. Seibert..... 452
In the treatment of obesity..... 704
Mullen oil for incontinence of urine. C. W. Vroom 452
Mustard treatment of scarlet fever..... 704

Neuroprin in epilepsy and neurasthenia..... 257
Nitric acid fumes in chronic bronchitis..... 705
Nitrites in hæmoptysis. Placak..... 642
Nitrogenous metabolism in epilepsy..... 319
Nitroglycerin. Blair 577
In neuritis 320
Nitrous oxide and oxygen alone and in combination with ether. Buckler..... 385
Normal serum 320

Oatmeal in diabetes mellitus..... 578
Its action on the thyroid gland..... 64
Oil in bone-marrow in stomach affections..... 101
Of turpentine 452
Oleum chenopodii 141
Olive oil and cotton-seed oil in stomach troubles 257
Opium habit in the Philippines: Its treatment. 578
Index in pulmonary tuberculosis..... 578
In acute chronic diseases..... 64
In peritonitis 257
Opsonic index 320
In orthopædic surgery..... 65
In erysipelas, and its relation to treatment of incubation of killed streptococci..... 101
Specificity 516
Oxygen in medicine and surgery..... 453
In the treatment of nerves and vaso-motor disturbances of the climacteric..... 705
Hypodermic injections in sciatica..... 386
Its influence upon wounds and infections..... 642
Its subcutaneous injection in neuralgia..... 320

Paraffin splints in prolapse of the rectum in children 321
Passive hyperæmia in the treatment of gonorrhœal arthritis of the large joints. Baetsner 643
Pellagra. R. H. Bellamy..... 516
Pepsin: Its secretion in infants. J. Rosenstern 579
Peroxide of hydrogen in ear diseases..... 65
Phthisiotherapy by means of emulsion bacilli.. 102
Phenol and the hands..... 102
Its value in tetanus. César Allievo..... 643
Picric acid in burns. Vinnedge..... 579
In burns of the eye. A. Fortunati..... 579
In treatment of chemical burns in the eyes.. 142
Pilocarpin and the lymphocyte output. Rous.. 386
Placental transmission of bacillus typhosus. Cohoe 517
Polyvalent bactericidal serum..... 142
Potassium bitartrate in wounds..... 258
Iodide in acute rheumatism. Muscariello..... 580

Digitized by Google

Probilin. Charles S. Rockhill..... 386
Protargol and electricity for the cure of pyorrhœa alveolaris. J. Denser Whittles..... 517
Psychic treatment of alcohol and drug neurosis. T. D. Crothers..... 387
Psychotherapy. B. Onuf..... 388
Psychotherapy 321
Pyocyanase as prophylactic and remedy for certain infectious diseases..... 66

Quinine and urea hydrochlorid in malarial infections 706
In obstetrics 66
Sulphate in blackwater fever..... 706
In syphilis. H. Napp..... 454
Prophylaxis of malaria. E. R. Stitt..... 388

Radium treatment of nevus. Nagelschmidt.... 454
Red wine irrigations in infantile diarrhœas. Houssay 517
Rest: Importance in non-operative gynecologic disorders. E. A. Weiss..... 643
Röntgen rays in epithelioma..... 66
Ray treatment of epithelioma..... 258

Salodine in the treatment of syphilis..... 322
Salicylates in rheumatism..... 102
Saline injections for sciatica..... 259
Santonin in dysentery..... 259
Scopolamin-morphine anæsthesia in gynecology. Sieber 518
Method of giving chloroform..... 644
Serum diagnosis of syphilis.....580, 644
In the treatment of cerebrospinal meningitis. 645
Treatment of cerebrospinal fever..... 707
Of Osteomalacia. Hoffmann..... 389
Sodium anilin-arsenate in syphilis..... 106
Chlorid in blood. Vanderhoof..... 518
Chloride: Its elimination in kidney affections 322
Citrate treatment in gastro-intestinal affections of infants..... 707
Nitrite and amyl nitrite in hæmorrhage..... 322
Perborate 581
Its uses 259
Salicylate in the treatment of sympathetic Ophthalmia 707
Sondern's differential resistance line..... 581
Specific serum for scarlatina. W. Pulawski.... 454
Spinal Anæsthesia: Its value in gynecological laparotomics 645
Stovain: Its changes in the nervous system after spinal anæsthesia..... 582
Strontium bromid 104
Its effects 323
Strophanthine, intravenous injections of..... 645
Strophanthus 582
Strychnine: Its special value..... 104
Styracol therapry in broncho-pneumonic affections 708
Sugar in the treatment of fresh wounds..... 260
Its utilization 324
Sulphonal 260
Suprarenal preparations in obstetrics..... 645
In urinary incontinence..... 708

Tannyl: A new intestinal astringent. Umber. 582
Therapeutic immunization in mixed infection. A. P. Ohlmacher..... 518
The x-ray in neurology..... 708
Thiosinamin: Its effect on peritoneal adhesions. Jervino 519
Tobacco in surgical practice..... 324
Transplantation of vessels, organs, and limbs. 709
Treatment of chronic urethritis by zinc Ionization 710
Of pernicious anæmia..... 710
Trional 261
Trypsin in cancer..... 261
In malignant disease..... 261
In malignant tumors..... 262
Tuberculin immunization 262
In renal tuberculosis. A Pielicke..... 390
In treatment of tuberculosis of the kidneys.. 143
Its value in pulmonary tuberculosis. Hamman 519
-ocular reaction. H. C. Parker..... 455
Reaction, ocular. C. P. Clark..... 391
Therapy 324
Turpentine in prophylaxis and treatment of puerperal streptococcic infection..... 325

Urotropin treatment of lumbage of febrile affections 710
Use of potassium iodine in thickening of arterial walls. J. H. Spitzly..... 646
Of ichthyol in the practice of gynecology.... 711

Vaccines in gonorrhœal arthritis..... 105
Vanadrum compounds in intrauterine injections after labor..... 143
Venesection. J. Daland 582
Veronal as an aid in chloroform narcosis..... 143
Viscum album (mistletoe) in hæmorrhages..... 144

Water treatment in post-operative vomiting... 263

X-rays and high frequency in the treatment of leprosy 711
X-ray in oral surgery..... 106
Treatment of Bright's disease..... 106
Of malignant tumors..... 144
Of exophthalmic goiter..... 711
Of tuberculous osteoperiostitis. Paoli..... 646

Yeast as a dressing for burns..... 711

Medical News and Miscellany

Medical news and miscellany.....29, 69

Original Articles

Acteyl-forma-sal. Henry Fisher, M.D..... 4
Alnus serrulata. J. M. French..... 376
American Proctologic Society abstracts. Reported by Lewis H. Adler.....436, 503, 568
A rapid method of test-meal removal, lavage and inflation. Francis Ashley Faught.. 443

Cases of negative diagnosis of tuberculosis. Ephraim Cutter, M.D..... 43
Cases of negative diagnosis of tuberculosis. Ephraim Cutter, M.D..... 124
Cases of negative diagnosis of tuberculosis. Ephraim Cutter 427
Chloroform poisoning. John V. Shoemaker.... 501

Don't swallow the enemy—Don't touch the enemy—Don't breathe the enemy. Frank T. Woodbury, Captain Medical Corps, U. S. Army..... 692

Gynecology at the American Medical Association and Medico-Legal. E. S. McKee.. 432

Medical books ten years old valueless. Ephraim Cutter 564
Medico-legal. E. S. McKee, M.D.....47, 634
Membranous rhinitis. E. B. Gleason..... 304
Morphine poisoning. John V. Shoemaker, M.D., LL.D. 122

Observations relative to the treatment of cardiac diseases. Milton A. Nobles, M.D.. 6
Oikeiomania. T. G. Stephens..... 303

Report of a case of iodism. Herbert J. Smith. 492
Of some gynecologic abnormalities. John A. McGlinn, A.B., M.D..... 690

Rheumatoid arthritis. William N. Johnson, M.D. 2

Digitized by Google

Stone in the bladder. S. Leon Gans..... 494

The action of phenolphthalein, cascara sagrada and ergot upon the intestinal movements. Isaac Ott, M.D., and John C. Scott, M.D. 90

Dietetic and medical treatment of chronic catarrhal gastritis. A. C. Morgan..... 300

Microscopic diagnosis of diseases by blood smears. L. Napoleon Boston..... 307

Therapeutics in the light of ecology. John V. Shoemaker 233

Therapeutic nuggets. Pharyngitis: Its drug treatment. W. C. Abbott, M.D..... 86

Tips. E. S. McKee, M.D..... 127

The relation between retinal hæmorrhages and high arterial pressure. L. Webster Fox and Warren C. Batroff..... 626

Significance of headache. C. M. Harris, M.D. 44

Treatment of chronic posterior urethritis. H. M. Christian, M.D..... 87

The United States Pharmacopœia from a physician's standpoint. James M. Anders.. 242

Treatment of early cases of ectopic pregnancy, before and after rupture. John A. McGlinn 369

Woman in the business world. E. S. McKee, M.D. 626

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